

Canadian Computer Wholesaler

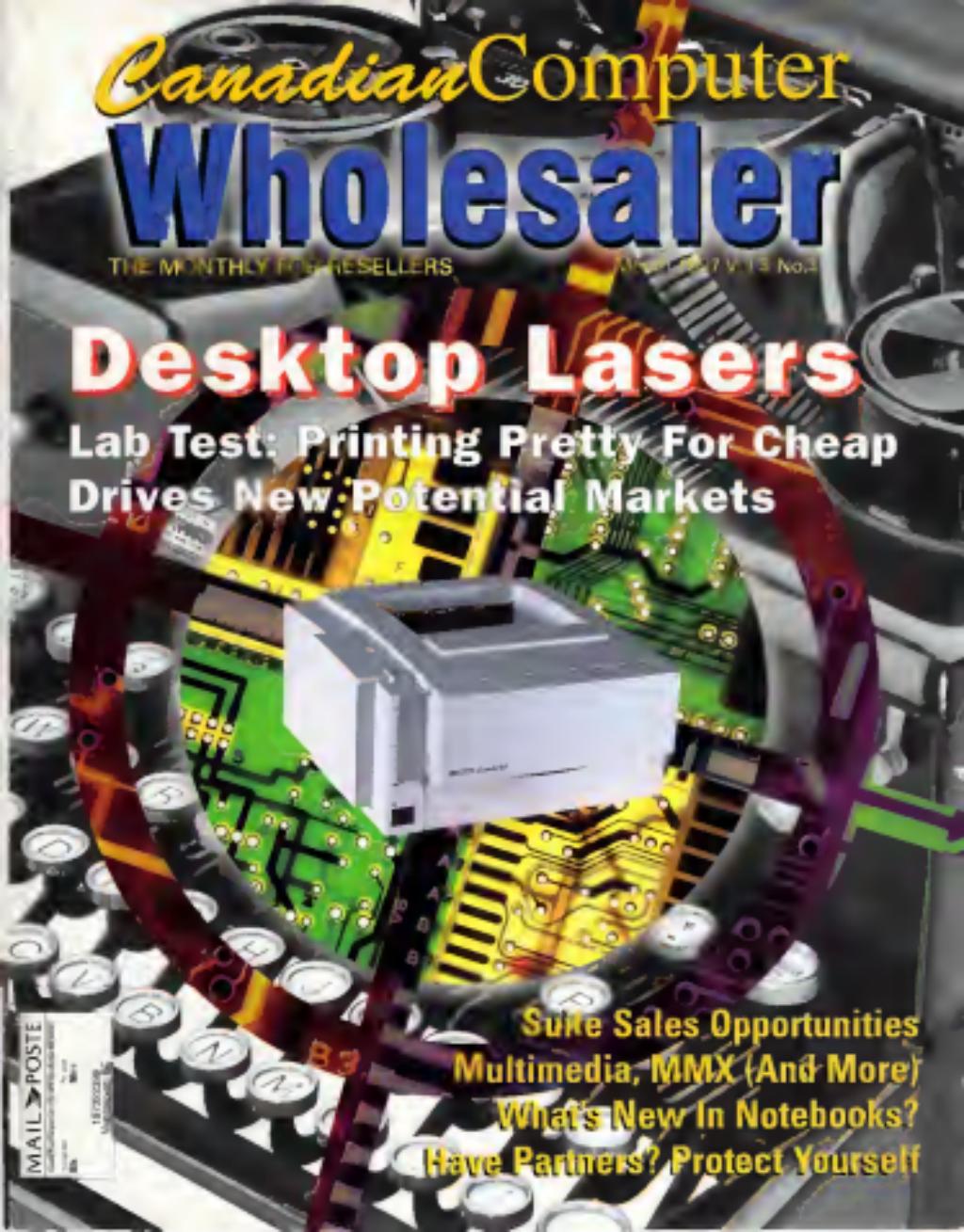
THE MONTHLY FOR RESELLERS

Newspaper No. 1

Desktop Lasers

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Buffer	128 KB	128 KB	128 KB
Data Rate (MB/s, Max)	10.0, 12.0 MB/s	10.0, 12.0 MB/s	10.0, 12.0 MB/s
SCSI Sync	—	10.0, 12.0 MB/s	—
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Warranty	3 Years	3 Years	3 Years

SCSI = Small Computer System Interface

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Data Rate (MB/s, Max)	10.7 MB/s, PIO Mode 4, DMA Mode 3	10.7 MB/s, PIO Mode 4, DMA Mode 3	10.7 MB/s, PIO Mode 4, DMA Mode 3	10.7 MB/s, PIO Mode 4, DMA Mode 3
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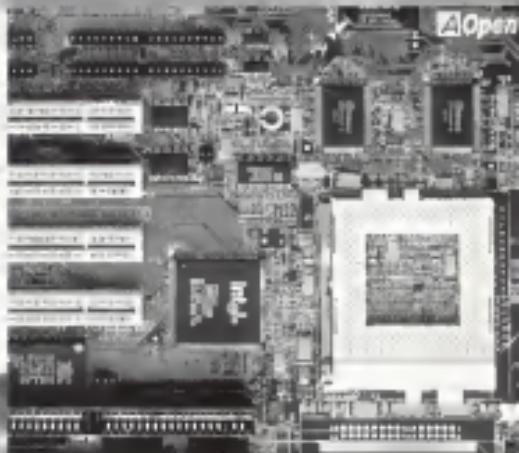
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APRIL	Feature Hardware Focus Software Focus Lab	Setting to Government: POAs Database Management Budget Computers	Mar 14	April 2
MAY	Feature Hardware Focus Software Focus Lab	Client/Server Computing Printers Servers Hard Drives & Storage	Apr. 30	May 7
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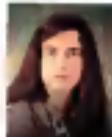
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Just How Far Will We Go?

I was flabbergasted to receive an E-mail message from my spouse the other evening. Now, the fact of the E-mail itself was nothing remarkable.

The extraordinary thing while I was in my home office, the due follow was E-mailing me — from our living room!

The times, (to quote Bob Dylan) they are a-changin'. A friend of mine has publicly lamented the fact that her husband insists on bringing his cellular phone and pager into the washroom while he showers, so as not to avoid missing a call.

As a society, we are truly wired, and are becoming more so, each and every day. Work is underway to enable each person to have an individual cellular phone number at which they can be reached, regardless of their location — anywhere around the globe! With cellular modems, our notebooks can handshake with the office and upload, download or synchronize our valuable data from our cars, from the street corner — and, if the ads are to be believed, from the beach.

Speaking of notebooks, for an in-depth overview of the Canadian notebook market, read "The Canadian Notebook Market — Worth Watching In 1997" (page 18), by Jeff Evans, Canadian Computer Wholesaler's Toronto editor.

Other key technology patterns this issue include a look at the wireless market ("How Sure It Is," page 24), by Paul Lunn; an update on multimedia, ("Multimedia — Is MMX The Next Frontier?" page 26), by Paul Wheright, and a look at the point-of-sale market ("POS May Be A Solid Niche Market," page 52), by Geoff Wheright.

But even the most lightweight full-sized notebook starts to weigh the mobile worker down after several hours of lugging the computer about. Hence, that's some of the attraction of the handheld computer and PDA. In a recent conversation with Joseph Ng, regional sales manager office automation division at Sharp Electronics of Canada Ltd., he spoke of his own personal Zaurus keyboard personal digital assistant as vital because of the important contact and scheduling information it contains. He said: "It's worse than American Express — don't leave home without it!"

And if you think PDAs are small and lightweight — take a look at Tracex's Data

Link watch that includes Microsoft software, functioning as a organizer/organizer. Users simply hold the watch up to the PC monitor, where data downloads from the PC, via a light sensor in the watch. (You'll think it's magic — says Tracex's marketing materials.) This is just an indication of things to come. As microprocessors become smaller, faster, cheaper — pundits predict the average citizen may wear as many as five chips on their body within a matter of some years. While certain products may be faddish and will no doubt come and go — technology is here to stay, and will become more and more integrated with our lives.

As providers of high technology products and services — you are in what ought to be an enviable position, carving a niche in an ever-growing market. Yet, the challenges include fierce competition, stiff margins, short product cycles, complex (and ever-changing) knowledge requirements plus an increasingly sophisticated (and often blind) buying public.

Technology manufacturers and developers don't plan to slow down any time soon. As long as they can make their products go faster, smaller, cheaper, and more powerful — they will. And if they can conceive of, and launch entirely new technology categories, they'll do that too.

Yet, in this TV culture, it's becoming more difficult to evoke the Gee Whiz buying response. An increasingly skeptical, and technology averse public will want more than just a pitch for their buck.

As the next wave of technology washes over us, your customers will be asking: What products and services are genuinely going to improve my quality of life, make me more productive, increase my enjoyment, and save me time and money?

As a successful high technology reseller, it will be your job to anticipate these questions. This is more than merely pushing product — it's providing (and illustrating) true solutions to real business and life needs.

I'm not saying I don't want to strap on five microprocessors, but I want to know: Will it be more productive, more effective, younger or thinner? Just let me know, and I'll be sure to E-mail my spouse. (I'll

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Column On Web Commerce Was Timely Comment

Doug Alder's column in *Canadian Computer Wholesaler* (February 1997) touches on some very timely matters. Web sites in our industry (post-paper printer supplier), tend to be lists of keys, meadow statements and outsize word graphics. The fibbed SOHO claim, (or at least the thoughtful ones) were hard information answers to some cartridge problems, compatible OPC drivers for offsetless printers, and their legal position regarding threats to void printer warranties should competitor toners be used.

Our experience in 18 months, with two different providers and two versions of our site, has been a 350 per cent increase in visits over four months compared to 14 months with the first site. What changed? We realized our home page was not entirely clear about our core business, the key words 'toner', 'cartridge' and 'remanufactured' were not repeated enough in the first 100 words for the major search engines to propel us high up on the search results lists. But most of all, we didn't give visitors a good reason to buy us for purchases.

The results we give away now is fine. Equal assistance with toner ordering problems or solving. The stuck we do not put up, as our site is a 1,000-page cross reference to all paper supplier. For visitors, there are no long distance charges, no postage, no incremental costs other than 20 minutes per day. Shortly, we'll put up refining instructions for the top five inkjet-printers, which

Not all new customers tell us that they visited our site, but it appears that about 25 per cent of our new business is off the Internet.

What's the down side?

Home users who want essays and free samples and sports clattering up our E-mail.

There's no point in doing more than deleting the offending E-mail, you could be incurring the expenses by allowing his message over many newsgroups again. It's a small enough price to pay for a service which overall may save my wife's ever employed.

John Connolly
General manager
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Industry Flash

Intel acquires minority stake in Xicom Inc. for networking

(NB) — Computer chipmaker Intel Corp. recently purchased US\$50 million worth of shares of a 12.5 per cent stake in Xicom Inc., a US\$187 million company specializing in mobile networking products. The stake will eventually increase to 20 per cent within a five-year period, as Intel is set to purchase 7.5 per cent more in Xicom's stocks according to Dick Gates, Xicom's founder and chief executive officer (CEO).

Gates made the announcement in a local news conference. The CEO, who co-founded the company in 1986, said, however, that Intel's share can't go beyond 22.5 per cent, to dispel any speculations that the dominant chip company would buy the company in the future.

Furthermore, Xicom has also signed an original equipment manufacturing (OEM) agreement with Intel, out of which they expect to generate "multi-million" revenues within a three-year period.

This three-pronged alliance with Intel apparently "validates" Xicom, according to Gates, who claimed that anyone Intel puts its hands on any technology, that is tantamount to validating it, as well as the company or the companies supplying that technology.

Computer vision syndrome studied

A "Survey of Optometric Concerns: Patients Who Work on Computers" from the American Optometric Association, said 86 million eye exams were conducted for prescriptive lenses in 1995, compared to 10 million in 1992. A notable 15 million people sought help for computer-related eye problems in 1995, compared to 10 million in 1992. Symptoms reported by computer users and claimed to be associated with computer use included: "headaches, blurry vision, tired or burning eyes, as well as other symptoms."

Related data from 1994 from the U.S. National Institute of Occupational Safety and Health (NIOSH) indicated that 88 per cent of computer users experienced computer-related symptoms. Various remedies are proposed, including filters or coatings on lenses, but most doctors believe further research into causes and cures for computer vision syndrome are needed.

Novell aims offering at small business

Novell Inc. has announced its InternetWare for Small Business, which includes user-based licensing that the company says will reduce costs for small business.

The pricing system lets InternetWare for Small Business customers buy the product in small increments and add individual users as their businesses grow. The offering is aimed at businesses with 25 or fewer users.

The product provides such network services as software installation, network management and administration capabilities. The list price is \$1,250 for a server plus five-user license. The list price for an additional one-user license is \$80.



Novell

Contact: The Editor

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Canadian Computer Wholesaler welcomes your opinions on current issues in the market, plus your feedback on our publication.

NEWS

We welcome your ideas regarding news and feature topics for Canadian Computer Wholesaler. Feel free to contact the editors directly with your suggestions.

TEST LABS

We'd like to hear your feedback and suggestions on our Test Labs reviews section.

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Intel price cuts are smaller than expected

(N.Y.) — With the sale of MMX chips soaring, MMX PCs hitting the market strong, its stock price at an all-time high and still climbing, and all of Wall Street singing its praises, Intel Corp. is showing no muscle by not cutting prices as much as most analysts expected.

Intel did announce some cuts, not as deep as some expected, but left unchanged the prices on the higher end Pentium Pro, and barely reduced the price of the top-end Pentium chip.

It has been standard for chip makers that introduce new products to cut the price of their previous offerings. In bucking this trend, Intel is trying to hold the line against this standard price-cutting policy. In its pricing announcement, Intel said 160MHz Pentium Pro and 200MHz Pentium Pro chip prices would remain unchanged. All prices announced are in 1,000-unit quantities.

The company said its 133MHz Pentium Pro has been reduced to US\$874, down from around the US\$910 level that it has been selling for. This is a decline of around 34 per cent.

In the Pentium chip line, Intel said it has not changed the price on the 100MHz Pentium, which has been selling for US\$5106. It did reduce the price of the 150MHz Pentium, from US\$5229 to US\$5161, over a 40 per cent reduction. The 200MHz Pentium was reduced only slightly, from US\$399 to US\$398. In contrast, the 200MHz MMX Pentium sells for US\$339.



BAPCo adds battery-life benchmark notebooks

Santa Clara, Calif.-based BAPCo (The Business Applications Performance Corp.), has announced SYSmark32 for Battery Life, a benchmarking software title that claims to be "the first benchmark that uses real-world Windows 95 applications to measure battery-life performance for notebook computers."

Variables such as screen brightness settings, frequency of hard drive and floppy drive access, keyboard activity, and power saving during brief periods of inactivity, all can make reliably battery benchmarking difficult. The SYSmark32 for Battery Life benchmark measures battery life in simulated "real-world" user environments. Benchmark scripts include delays to account for typing time and "think time," as recorded in actual studies of notebook user behavior. The benchmark product comes with a photocell sensor to measure the brightness of the notebook screen, to detect whether the intensity of the screen images would actually result in a readable display. As well, a mechanical actuator device presses keys in synchronization to the application scripts, to allow accurate, automated simulation of human keyboard usage.

"For the first time, resellers, testing labs and large-scale buyers can measure battery performance for notebooks based on how the average user runs popular Windows 95 applications. OEMs can use the benchmark as a tool to improve battery life," said a statement from BAPCo. The full SYSmark32 for Battery Life package, which includes the photocell sensor and keyboard actuator, is US\$995. **BB**

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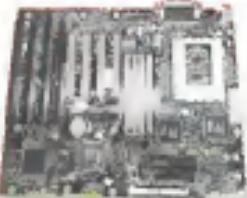
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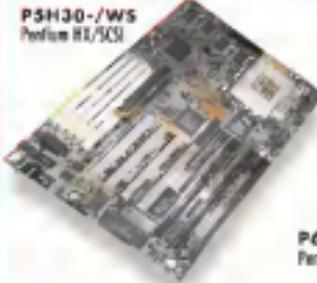
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Canadian News

Comtronic has rolled out videoconferencing package

Comtronic has introduced its ExpertCom DVC3610 Video Conference Solution, with features ranging from PCI 2.1 compatibility with plug-and-play features to full duplex audio for natural conversations (with audio and video).

The system provides VDOPhone capability for Internet, intranet and LAN communications. According to the company, users can place a call to, or receive a call from any other Internet VDOPhone user, and instant two-way color video and audio over 14.4 and faster modems.

The package includes a PCI camera interface, a color digital camera and VDOPhone Internet Telephony. Suggested retail price is \$1499.



Comtronic ExpertCom VDOPhone Interface

U.S. Robotics enhances channel programs in Canada

U.S. Robotics Network Systems Division, in Burlington, Ont., has announced a range of reseller support services and programs.

The Gold Systems Partner program is available to resellers who sell the enterprise systems product line. This is aimed at VARs who can deliver what the company calls "sophisticated custom solutions with full support and installation." The sales quota is \$100,000 per year, and there are requirements as to staffing and expertise. The benefits of belonging to the program include dedicated channel marketing reps, qualified leads and demo equipment, monthly information packages, product literature, and on-site sales and product training.

The Team Access Provider program is for resellers of branch office products and has no quota requirements. It offers a 20 per cent discount on demo units, and provides market development funds, incentive programs, pre-sales technical support, channel tips and Partner Is Profit training.

The enterprise systems distribution arm is Westcom, EMU and Access Computer. Branch office distributors are Ingram, Mersel, Globelis and MultiMicro.

IBM buys rest of Polar Bear

(NBI) — IBM Corp. subsidiary IBM Canada Ltd. has bought the 49 per cent of Polar Bear Software Corp. that it did not already own. Financial terms of the deal were not disclosed.

IBM Canada first purchased 51 per cent of Polar Bear, a computer-training firm based in Winnipeg, in 1992. IBM announced that purchase at the same time it turned its training, education business into a separate subsidiary, Skill Dynamics Canada.

Polar Bear Software will remain a separate company for the time being at least.

The company produces multilingual courseware and training programs.

DataTrain PCs boast flexibility

Richmond, B.C.'s ServiceWorld Distribution Inc. says its new line of DataTrain DCP 100 desktop and 707 mid-tower PCs offer "complete flexibility" for configuring the latest in PC component technology.

The systems are powered by Intel's 430VX chipsets (75MHz to 200MHz); the systems support MMX, IDE RAM and Synchronous DRAM memory up to 128MB, wireless data transfer through IrDA and Universal Serial Bus, plug-and-play. They also include 2.5 5 KB pipeline hard cache memory, and come with a two-year warranty. **SW**



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Your PC Will Soon Read Your Paper

Despite the best hopes of technology enthusiasts and environmentalists, this is still a paper-based world; and it's time for our computers to deal with that.

by David Kosake

Computers were supposed to reduce our dependence on paper, but still though a typical modern workplace and you'll see the paperless office is still a distant hope. The fact is, paper remains one of the most efficient ways of storing and transmitting information — between humans, that is.

We know we'll never be much good at deciphering the bits-and-bites-on-magnetic-media stuff, so we've demanded that the computer learn to better deal with our preferred medium — paper and ink. Banks, insurance companies and governments are some of the most highly computerized organizations, but they still rely on lots of paper forms. Why? Because of the human factor.

When IT-trained professionals conduct business with each other, they can dispense with paper and go right to EDI. But if you're an insurance company that has to send claim forms to people who may never have sat in front of a computer, paper is still the medium most people know how to deal with.

The main problem is, once the form comes back you've still got to get the paper-based information into those back-office computers. When you think of the number of charge card slips or insurance claim forms that have to be processed each day, it's not surprising that these industries are always interested in the advances in document imaging, optical character recognition, and forms management.

Even small businesses and individuals are seeking relief from the ergs of paper, as the instant success of products like the Worcester PaperPort would indicate. However it's the big need that's driving development — and it's in the high-end that you see interesting products emerging.

At the Comdex/Psiccom trade show held recently in Vancouver, for example, Cardiff

Software was demonstrating its latest TeleForm forms processing products. The San Marcos, Calif.-based company has two variations: TeleForm and TeleForm Elite, running at approximately US\$1,500 and US\$5,000 respectively.

Cardiff says TeleForm can gather forms

from a variety of sources, read a variety of data types, and then play the data into a spreadsheet or database. If you think of the many ways that information comes into an organization — regular mail, E-mail or fax, for example — Cardiff is aiming to manage them all. To process the data, the TeleForm products use a Tri-CR recognition engine, which has an optical character recognition (OCR) function along with ICR, which refers to the ability to interpret hand-printed characters, and OMR, which refers to the ability to interpret check marks, etc., in multiple-choice forms. The program will scan parts of a form — a signature, for example — as a bitmap image, and also read standard and secure bar codes.

A Super Barcode From PARC

And speaking of buzzards, Xerox Corp.'s foundry of great technologies, the Palo Alto Research Center, or PARC, has been working on an intriguing variation of machine-reading, optical character recognition, and forms management.

"If barcodes are a vacuum tube-level technology, DataGlyph is an integrated circuit."

able marks on a page. It calls the technology a DataGlyph or glyph. The best analogy I can draw is that if barcodes are a vacuum tube level technology then the DataGlyph is an integrated circuit.

The DataGlyph embeds digital information on a printed page through a scheme of diagonal hatch marks. Hatch marks going one

way represent 0s and those going the other way represent 1s — and voila, you have the basics of digital data. Glyphs don't have to take any particular shape, says Scott Frame, vice-president of Xerox's Office Document products division, shown during his keynote address at Comdex Pacific. A document

which is as would look like text and graphics could,

at the same time, contain glyphs — in the logo for example — that would provide digital information for a computer.

Later, when I was discussing the idea of glyphs with some graphic arts people, one person wondered aloud if we might one day be able to send a fax of a corrected proof to a printer and have the actual graphic file embedded in the fax image with glyphs. That might not be too useful, Frame said, color information, stored as glyphs within a black and white fax, could give manufacturers for a color capable (and glyph-aware) printer or photocopier to output the file in full color.

And it may well be the ability to store instructions, not just data, that will give people a reason to clamber toward glyph-based products. It's not unusual in a large corporation to have a large printing job produced at batches of more than one printing center. Frame said the instructions on how to consolidate the job or handle each page could be embedded within the pages themselves. Fiddling with instructions or duplexing them then the printing.

The instructions on how to collate and assemble the final document could also make as glyph information that the collating and binding machinery would read.

David Kosake is a Vancouver-based journalist specializing in high technology, and is News Editor of The Computer Paper. He can be reached at dkosake@jive.ca

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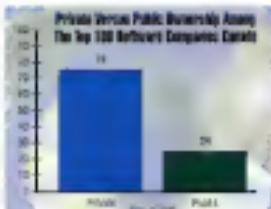
REPORT FROM CANADA

Big Players Dominate Canadian Software Market

by Leslie Armond and Margery Leach

The Canadian independent software industry is a growing and dynamic sector of our economy. Canadian software companies are showing no fear in competing with the "big players," and they continue to prove that they possess the drive and know-how to succeed both locally and globally.

Brands Group Inc. monitors the major trends and dramatic shifts in the industry. Employing our Software500 database of the top 500 independent Canadian software and services companies, we track the top 400 software developers and the top 100 professional service providers in Canada. In a recent industry analysis of the top 100 independent Canadian software developers (based on their total revenues in 1996), we have noted several



most successful software companies and the rest, the top company generates more than \$400 million, while the 100th-largest company generates just under \$2 million. Yet, our top companies employ only 18 per cent of the employees. The earning ratio per employee for our top companies is much higher than that of the smaller companies. The average earning ratio per employee is about \$100,000 overall, while the top earners can reach as high as \$400,000 or more per employee. Almost 80 per cent of the software companies are privately held.

While most sectors of the Canadian and international economies have experienced significant downturns during the 1990s, the software sector has experienced employment gains. During 1996, the top 100 Canadian software developers' employment rate rose by 25 per cent. Clearly, this is one sector that is poised for continued growth and success in the global economy.

significant trends, three of which are highlighted here. One is the large discrepancy of earnings between the top earning companies and the rest, the second is the large majority of Canadian software companies that are privately held, and the third is the growth in employment in the Canadian software industry.

The top five companies generate more than 50 per cent of the total worldwide revenue of the top 100. The top 10 generate 65 per cent of the total revenue. To illustrate the enormous chasm between Canada's

Leslie Armond and Margery Leach are consultants at The Brainspot Group Inc., in Ottawa — an international marketing and management consulting firm with a stated commitment to "Delivering Competitive Advantage to the IT Industry." Please call 613-225-2855, ext. 215, or fax 613-720-0316.

Voice Your Opinion! Reader Poll

Recently we asked our readers about Windows CE and the impact that would have on the handheld computer market. Our respondents indicated they have at least some optimism about the future of the new Windows CE-based systems.

WHAT YOU SAID:

Do you expect the new handheld computer category will be the market based on Windows CE will:

- Be very hot sellers. 17%
- Have some attraction for certain users. 75%
- Not have much appeal. 8%

This Issue:

Intel Corp. has been actively pushing its new MMX microprocessor technology, which it says will boost the performance of multimedia applications and encourage more development on that front. The technology promises to support full-motion video, 2-D and 3-D graphics, image processing and manipulation, audio and speech synthesis, videoconferencing and real-time animation. Intel has predicted of new PCs will carry MMX technology by 1998.

Our question to you:

In the light of Intel's enthusiasm about its MMX technology and the role that will play in driving the development of new multimedia applications, which most recently reflects your view on the technology?

- I'm very optimistic that MMX will drive new development, and increased opportunity for new sales.
- MMX will have some appeal as people look to upgrade their systems.
- I don't predict the arrival of MMX will have any marked impact on additional hardware or software sales.

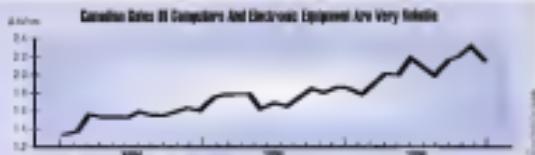
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CANADA

The Canadian Notebook Market —

Worth Watching In 1997

by Jeff Evans

Ever since the upstart Compaq company introduced its 'huggable' portable computer in 1984, the mobile computing field has had a cachet that set it apart from the desktop PC. The need to squish high performance into an impossibly tiny case has made notebook computer designers the most avid exponents of leading edge — and "bleeding edge" — digital technology.

Notebooks constantly push the technology envelope, and the result has typically meant higher prices (compared to desktop models), higher dealer margins, faster obsolescence, and higher customer expectations.

Looking Back

According to Bill Gates in his keynote address at the 1996 Comdex in Las Vegas, last year saw the greatest progress in personal computing technology since the invention of the PC. This was especially apparent in notebooks. During 1996, low-power consumption Pentium processors became common, then became cheap and fast, and enabled by completely dispelling the 486 chip. The standard RAM in a notebook jumped from 4-MB, to 8-MB, to 16-MB. The standard hard drive capacity jumped from around 350MB to about 1GB. Screens went from around nine-inch to 12-inch; the market for monochrome screens faded to black, and active-matrix screens became common, and much cheaper. Graphics displays with SVGA and even XGA resolution (800 by 600 and 1024 by 768 pixels respectively) and color palettes of 16.7 million colors began to appear in large numbers. CD-ROM drives, either external, or more commonly, internal, became much more common, and increased in speed from 2X (300 KB/sec) to 10X (1.2 MB/sec) and faster. In short, the average notebook made a huge leap from a limited-function "second computer" to a full-featured multimedia-ready "desktop replacement" computer.

According to some industry analysts, notebook sales grew 10 to 15 per cent over 1996, and to some extent, notebook sales cannibalized some desktop PC sales, as increasing numbers of PC owners opted for a powerful notebook over a desktop PC.

The Winners And The Losers

The big notebook market share winner in 1996 was Toshiba of Canada Ltd., which claimed its market share grew from the low 20s to 32 per cent, making it by far the dominant player in Canada.

A surprising loser was Apple, one of the traditional "big four" of notebook vendors in many recent years. Its share of the Canadian notebook market may have dropped below six per cent. As well, many of the smaller "clone" vendors felt the pressure as a few big brand names took most of the new growth, although one clone notebook maker — Easware, moved into the top 10 Canadian notebook suppliers list.

According to published International Data Corp. (Canada) Ltd. data, for the first nine months of 1996, IBM and Compaq were the "Big Three" in the notebook market, with 24.6 per cent (compared to AC Nielsen figures (which measures retail sales) for all of 1996 which claimed Toshiba had 32 per cent), 17.7 per cent and 16.2 per cent respectively. Next, were NBC, with a very solid 8.8 per cent, and Apple, with a disappointing 5.9 per cent.

AST, Zenith, Dell and Duracom ranged from 4.6 per cent to 2.3 per cent, while all other vendors fought for the remaining 19.2 per cent of the market. According to IDC, about 213,000 notebooks were sold in Canada during the first three quarters of 1996.

Looking Ahead

According to representatives of leading notebook vendors, some anticipated trends in 1997 are clear:

First, the strongest competitive advantage of any brand is a reputation for reliability. As more notebook users decide to "buy up" to a multimedia notebook that is their "only PC" replacing the former desktop and the notebook becomes absolutely "mission-critical" The system has to work, and if for any reason it goes down, a replacement unit has to be available, while the original unit is serviced.

Most software now comes on a CD-ROM, so it will increasingly be normal to have a CD drive with every notebook. Modular storage bays, which the user can access to swap a CD drive with a floppy drive, or even a spare hard drive or a second battery, are becoming increasingly popular. As flat screens become larger, the need for a 14-inch or 15-inch alternative monitor or the office desktop is less important, and many notebook owners are forgoing the cost of an external monitor. 16-MB of RAM is the minimum standard, and will likely jump to 32-MB by the end of 1997. There is a surprising demand for Windows NT on notebooks (surprising to Microsoft, anyway, as it has failed to prepare the plug-and-play features and power management features for NT that would have made that operating system well suited to mobile computing). As a stop-gap, some vendors are making their own proprietary fixes for this shortcoming to market, but expect Microsoft to get the NT-notebook puzzle sorted out by the end of the year.



GM photo/HP ED

Ultra-portable notebooks now come in two flavors: the traditional small footprint ultra-portable, and a large footprint ultra-portable with a big screen and big keyboard, but with ultra-thinness. NMX is anticipated to become the norm by the end of the year.

Docking Stations And Port Replicators

One of the enduring disadvantages of a notebook is limited expandability options. Aside from the typical two PC Card slots, there's no unused internal space. On the road, this is usually not so important, most notebooks either have an integral modem or the user can sacrifice a slot for a PC Card modem. Even if one needs to use a portable printer, most notebooks have integral parallel and serial ports. Back in the office, though, the lack of expansion slots for such things as SCSI cards (to connect to a scanner or an external tape drive or mass storage device for example) or network interface cards (NICs) is a major drawback. So, most notebook makers offer port replicators or docking bays to improve connectivity and expandability. According to representatives from the name-brand notebook companies, less than 25 per cent of notebook buyers use these devices. The increasing popularity of modular drive bays inside notebook cases allows users to swap multiple hard drives and other devices without the need for permanently occupying expansion slots or drive bays. Also, more and more features (sound, IR, network, etc.) MPEG video and high quality graphics) are built onto the notebook motherboard, eliminating the more obvious occasions for expansion by most users.

CE, Or Not CE?

The new wave of handheld computers, led by the Microsoft Windows CE platform which debuted in the fall of 1996, may possibly challenge the notebook market, but most observers believe that handhelds serve fundamentally different user needs than notebooks.

New versions of the U.S. Robotics Pilot, the Apple Newton, and other small info gadgets from Casio, HP and Sharp may proliferate as their ability to handle E-mail and other telecom tasks matures, but they will still have to go a long way in visibility and features to displace a full-function notebook computer.

The Contenders

A handful of companies dominated the notebook market in 1996 and their products and marketing efforts will determine the opportunities for notebook leaders in 1997. Here is a roundup of some of the current leaders and their main products.

Toshiba of Canada Information Systems Group

According to ACNielsen's *Canadian PC Pool Shipment Report* for 1996, Toshiba was the leading Canadian notebook vendor, with 32 per cent of market share (ACI figures for the first nine months of 1996 give a share of 24.6 per cent). Toshiba was also the leading notebook vendor worldwide.

Toshiba has a wide notebook product line, covering every category (business/comsumer, desktop replacement/ultra-range/entry-level/ultra-portable). Toshiba has negatively affected its line with new slate of the air models, lowering the ultralightness of many of its competitors. On Jan. 8 for instance, Toshiba released the Tecra 740 CDT, a 1400MHz MMX Pentium-based multimedia notebook, with a 2.1GB hard drive, a 10X CD-ROM, and a 13.3-inch TFT screen. The Tecra Portege 660 CDT is the latest model in the most popular line of ultra-portables on the Canadian market. The 660 CDT is the first ultra-portable with an internal CD-ROM drive, and at 2.5 pounds, offers full multimedia features. The Satelite line of entry-level notebooks has also moved to include multimedia features as standard, with the Satelite 300 CDS.

According to Paul Olivieri, marketing manager for Toshiba, Toshiba's motto, "Tough Enough For Today's World," is believed and valued by customers, and the company's reputation for reliability and

lower true cost of ownership has won it a three-percentage share of the notebook market's recent growth. According to Olivieri, Toshiba hopes that its success will continue into 1997, as the company aggressively improves its offerings, and aims for a 1997 market-share of up to 38 per cent.

IBM Canada Ltd.

Big Blue came off a 1996 market that saw its Canadian ThinkPad sales jump by nearly 85 per cent, keeping it in a strong Number Two position. The company had several innovative products, including the ThinkPad 560, an extremely slim, lightweight model with a huge screen which sold extremely well. Most of IBM's success has been up at the expense of the competing market, with products like the ThinkPad 760 family, which, along with the top-of-the-line Toshiba models, are known as the best desktop/multimedia power notebooks on the market.

Compaq Canada Inc.

Ironically for a company that began by virtually inventing mobile computing for the business market, Compaq lost its top position in the notebook market years ago (though it is by far the leading business desktop PC vendor in Canada).

However, the company has stated its intention to increase its market-share with two lines of notebooks: the Armada line of modular, value-priced computers (the Armada 1100 starts with a list price of



Top Left: *Toshiba Portege*

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\$2,099) and the LTE 500 (nearly the top-of-the-line Amico features a 12.2-inch screen, a 1.4GB hard drive and a 133MHz Pentium processor).

According to Compaq Canada, the company's notebook business has grown in step with the expanding notebook market. Compaq refrained from announcing an MMX model in January 1997, as it preferred to wait until the supplies of MMX chips would allow it to fill orders reliably. With more than 3,100 marketing partners across the country, Compaq has both the channel strength and the product range to fight hard for the Number Two spot in 1997.

NEC Technologies Canada

NEC became a major player in the notebook market a few years ago with its Versa line of notebooks, which, like Toshiba, covers a wide spectrum of configurations. The company gained a great deal of attention about two years ago when it announced it would focus on high-quality, but affordable TFT displays, at a time when TFT offerings from other vendors were significantly higher in cost than DSTN screens. NEC has quickly gained market-share, with a very attractively designed and highly featureful product line, and is largely to be credited with knocking Apple out of fourth place.

On Feb. 12, NEC announced a "next-generation" line of value Versa notebook computers, aimed at taking an even larger part of the mainstream market. The new Versa 2500 series is based on the Pentium 117MHz chip, and features 356KB Level 2 cache, a PCI bus, a 12.1-inch DSTN color screen, optional 3X CD-ROM drive, a 1.08GB hard drive and 16MB RAM standard, MPEG video, 16-bit sound, stereo speakers, microphone, and two PC card slots. Street prices start at \$2,999.



Compaq
17500

Apple Canada Inc.

Apple's manifold troubles in 1996 attracted a great deal of media attention, and one of the surprisingly difficult sectors for the company was the notebook market. Despite having what can be argued to be the most pleasant and usable operating system, and the best ergonomic designs, Apple's PowerBook line seemed unable to keep up with the rate of improvement on the Windows-based platform, and became seriously dated.

Apple claimed production problems made it unable to fill back orders on the existing product models. The relatively trivial incident of a couple of PowerBooks overheating at an Apple factory was magnified into "Exploding PowerBook" legends. Fortunately, in the first quarter of 1997, we should see some early evidence of the long-awaited Apple turnaround in the release of a new line of Apple PowerBooks, which promise to be among the most powerful mobile computing products on the market.

The new PowerBook 3400 line will feature PowerPC 603e processors running at 180MHz and 240MHz, built-in Ethernet and high-speed modem capability, fast bus architecture, PC Card expandability, large high-resolution screens and fast CD-ROM drives. Apple also has other mobile computing products, such as the iMac 300, aimed at the education market, and the Newton MessagePad 2000.

Dell Canada

Dell's re-entry into the notebook market in the last few years has finally born a return from the dust. Caught by the rapid obsolescence of its notebook line several years ago, Dell retired from that market, concentrating on desktop PCs. Realizing, however, that the notebook market was rapidly expanding, and offered lucrative margins, Dell started a carefully planned comeback. In the short term, a OEM'd AST notebook line began to re-establish its presence in the market. For the longer term, it hired the developer of the Apple PowerBook, John Meekins, to lead a team that designed an attractive, technically excellent line of Latitude notebooks from the ground up.



Appl
PowerBook
3400

AST Canada Inc.

AST's Aventus line of notebooks is aimed at customers who want high price/performance value. In late 1996, AST introduced the Aventus 750 model, with a 133MHz processor, a 6X CD-ROM, 24 MB RAM and a 12.1-inch TFT screen.

Due to continuing financial troubles in the U.S. market, Samsung, the Korean company which had invested in AST, expanded its control over AST's operations. After years as Canada's biggest PC success story, AST seems in crisis for some major changes. The effect on its position in the notebook market remains to be seen.

Eurocom

Nepean, Ont.-based Eurocom, a Canadian manufacturer of notebooks, was a surprise winner in the 1996 market, breaking into the top 10 Canadian notebook vendors. On Jan. 29, Eurocom announced its model 6200 Super Notebook, based on a 200MHz MMX Pentium processor.

Eurocom's president Mark Bafile said, "Eurocom had Intel's MMX technology in mind when we developed the 6200. We had the framework to support MMX even before Intel had completed development of the processor." Other features include MPEG-1 decoding, NTSC line out, and an 8X CD-ROM drive. A model 7200 Super Notebook, with a 14.1-inch TFT screen, an 18X CD-ROM and second hard drive is expected later in 1997. According to Eurocom, the company is looking for additional dealers to handle the rapidly increasing demand for its products.

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Acer/Texas Instruments

Acer won some early praise in 1997 for its AcerNote Naove, a premium desktop replacement notebook, one of the first wave of MMX equipped notebooks which appeared in January. In independent tests, the Naove displayed excellent battery life, and fast image processing. A major development for Acer was its announced purchase of Texas Instruments' mobile computing business. TI, while historically enjoying only a modest market share, had developed a good reputation for high quality rugged products that, while not cheap, were excellent value for mobile professionals. How Acer combines both companies' notebook product lines, dealer channels and customer bases in 1997 will determine whether the company moves into the big leagues of the Canadian notebook market.

Hewlett-Packard Canada Ltd.

HP has built a niche for itself with a line of OmniBook notebooks, which offer high performance along with very compact size and high quality. HP announced major price drops on its HP OmniBook 3800 notebook PC line, with street prices for a 160MHz Pentium model with 10GB hard drive and 11.3-inch DSTN screen starting at "well under \$2,200."

Sceptre

Also known for its monitors, particularly a striking flat screen model, Sceptre's current notebook line includes the model 3800 and 4000 SoundX CDS, which feature up to 133MHz processors, 1GB drives,

and either 11.3-inch DSTN or 12.1-inch TFT screens. The 3800 model starts at a \$2,220 street price.

Sharp Electronics of Canada Ltd.

Sharp, like Dell, is a company that withdrew from the notebook market in the face of extreme competition and fast product obsolescence in the early 1990s. However, it has an advantage over Dell and most other notebook vendors, since it is a major manufacturer of LCD screens. The company has determined that it will re-enter the North American market and has announced that it will build manufacturing facilities in the U.S. to manufacture notebooks on a large scale.

This month, Sharp is launching the PC-9300T and the PC-9300D notebooks, starting at \$3,900. Features include a 150MHz Pentium processor, 16MB RAM and a 1.4GB hard drive. "We're making a statement we're going to be a major contender in the notebook computer market with these full-featured notebooks," said Ron Pucci, regional sales manager, business systems products for Sharp.

A variety of Canadian computer build or distributor notebook computers for the 39.1 per cent (AMC figures) of the Canadian market which is not accounted for by the top 10 vendors.

Canadian Advanced Industries Ltd.

The company assembles the Angel notebooks, including a Pentium 133-based model with an 8X CD-ROM drive, a 1.35GB hard drive and 16MB RAM, ranging in price from \$3,199 to \$4,199, and a distinctive model 5800 Perseus Plus, which includes a removable LCD back panel for overhead projection of computer images.

KTX

The KTX 880 (distributed in Canada by Edge Wholesale Ltd.) is a slim 2.94kg multimedia notebook, including a CD-ROM drive, Pentium processor ranging from 100MHz to 133MHz, a 11.3-inch DSTN screen and a 1.0GB hard drive, for a street price of \$3,350.

Ultinet

This Toronto-based company is a major Canadian PC maker, with a line of iPVIM and Ultonet CDS notebooks, ranging in price from \$3,173 for an entry-level Pentium 100 system, to \$3,543 for a Pentium 166MHz multimedia system. Ultinet notebooks offer a good feature set for the price, and are aimed at mobile SOHO customers.

Computron/HyperData

HyperData was an early leader in the multimedia CD-ROM notebook field, and currently offers a line of Pentium notebooks (up to 150MHz), with a 11.3-inch DSTN SVGA screen and a 6X CD-ROM, at prices between \$2,899 and \$3,099.

Impulse

This Mississauga, Ont.-based company has often displayed the ability to leverage close contacts to Pacific Rim manufacturers to get the most current technology for its value-priced line of notebooks. The company has undergone a reorganization recently.

Jeff Evans is Toronto Editor of Canadian Computer Wholesaler. He can be reached at jeff@raport.com

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How Suite It Is

By Paul Lamo

The late Jackie Gleason used to start his comedy-variety TV show by taking a sip of coffee, then announcing to his studio and TV audience "How sweet it is!"

To justify the play on words, consider: while Gleason may have enjoyed his coffee — Java is the latest in office suites.

But office suites are no laughing matter. Businesses want to know if default office suites will diminish or enhance their value, added opportunities, and if Java suites will join-in the fledgling network computer (NC) industry.

"Office suites are real grab-bangs of programs," says Leon Rubenovich, a Toronto-based computer technology consultant. Once a company buys an office suite "they have pretty much all the software they need even though it may not be best-of-class."

This creates diminished opportunities to sell software such as personal information managers, databases, and utilities.

On the other hand, suites provide users with a myriad of opportunities, Rubenovich says. Opportunities include installing and customizing suites for users, implementing roll-outs across large workforces, training users, and setting up LANs, WANs or intranets so a disparate group of employees can work together.

Using Visual Basic in Microsoft Office 97, Lotus Script in SmartSuite 97, or creating Java applets for Corel's newest suite, third-party programmers can create custom applications for vertical markets. "With a development environment shared across Office 97 applications, you can create custom line-of-business solutions," says Kevin Dobe, channel marketing manager for Microsoft Canada Inc.

Microsoft's Office products command an 85 per cent share of the office suite market, according to estimates, and Microsoft's Office software is one of the company's biggest moneymakers. This makes the release of Office 97 Microsoft's most important product release since Windows 95.

Microsoft spent millions revamping Office, making it "the largest development in Microsoft's offer since Windows 95," according to Robert Buch, Microsoft's vice-president of marketing, desktop applications division.

Office 97: Fat But Integrated

Microsoft Office 97 besides new versions of Word, Excel and PowerPoint, Office 97's new Outlook personal information management program handles E-mail, and lets even keep track of addresses, phone numbers and schedules.

While Office Professional includes the Access database program, a Home Essentials package comes with Word 97, Microsoft Works 4.0, Greetings, Workshop, Internet Explorer and some games.

Part of Office's appeal comes from Internet and collaboration software that enables employees to work on documents together

"Office 97 is the best desktop suite for managing and creating intranet content and working with intranet data," said Dobe.

On the down side, Office 97 is 30 per cent bigger than Office 95. But it's not all fat. New features include Office Assistant, a sophisticated help system that lets users type in plain English help inquiries, and improved connections between applications.

In Outlook, for example, a user can drag E-mail drag it to a to-do list, or drop it into a calendar. Outlook also enables users to bookmark favorite documents — Web pages, Word documents, Excel spreadsheets — and launch them in Outlook, rather than switching to and opening the application. Outlook also gives users the ability to search different documentaries for information the way they would use a Web search engine.

"It's hard not to like Office 97," says Rubenovich. "It's not perfect, but it seems to be the path of least resistance, although it's significantly more expensive [than other suites]."

Lotus SmartSuite: Playing Catch Up

Purchased last year by IBM, big things were expected from Lotus in the battle for some supremacy. But the company dropped the ball, says Rubenovich. "SmartSuite has been a huge disappointment."

The major application in most suites is the word processor, he points out, but it took Lotus three years to turn Ami Pro into Word Pro. In addition, there were delays in introducing a 32-bit version of Lotus 1-2-3.

And G&T users, chomping at the bit for a dedicated suite of G&T applications, are still chomping. However, Marc LeBlanc, product manager, Lotus Development Canada Ltd., says Lotus is serious about SmartSuite 97 for Windows 95, and he says Lotus will have a full 32-bit suite for IBM's OS/2. "IBM has provided funding dollars. It will happen," says LeBlanc.

LeBlanc and Rubenovich agree that SmartSuite is particularly well-configured to connect users to the Internet and intranets. Documents can be published to the Web in HTML format and shared among a company's intranet or the Internet.

LeBlanc pointed out that SmartSuite is ideal for organizations using Lotus Notes for group collaboration, as it saves files to the Notes database environment. And SmartSuite 97's Team Computing feature enable users to share documents and complete joint projects or use

SmartSuite 97's add-in 32-bit Windows applications: Word Pro, Lotus 1-2-3, Approach database, Freelance Graphics, Organizer, and Lotus ScreenCam multimedia software. Also included are SmartMasters, customizable templates that suggest looks, styles and outlines for business documents, and Intelligent Help for step-by-step guidance.

Corel Puts The Coffee On

Although Ottawa-based Corel Corp failed to persuade a federal tribunal that the Department of National Defence (DND) unfairly award-



ed a \$10 million software contract to Microsoft, the same year David was claiming it's on its way to becoming Goliath.

Undaunted by the loss of the DND contract, Michael Cowpland, Corel CEO, told a Comdex/Canada audience last summer he expected "to exceed Microsoft sales shipped" and claimed Corel had 50 per cent of the new suite market.

Cowpland also shocked the computer world when he launched what one analyst called "a pre-emptive pricing battle" meant to explode Microsoft Office's supremacy in the corporate market. Rather than charging a license fee per user or an office network, the company charges per server. (A company can have anywhere from two to several hundred people on a server.)

PC Week reported, "Corel hasn't just thrown down the gauntlet. It has picked it up and hit Microsoft right where it hurts in the Office."

But Bill Gates, Microsoft CEO, downplayed Cowpland as a "mackie," adding, "He has made some noise up in Canada. It has not reached the U.S."

Indeed, while Corel WordPerfect Suite 7 and Corel Office Pro 7 have made it-ready in Canada and amongst some OEMs, Corel has put the catbird on and is striking its future on a Java-based office suite.

A pre-beta of Corel Office for Java (available for download from <http://officeforjava.com>) is scheduled to be launched in the second quarter of 1997. The pre-beta includes WordPerfect for Java, Quattro Pro for Java, CorelChart for Java, as well as a new personal information manager and E-mail component.

Describing it as "in rough shape" and "glacial in terms of speed," Rehmanzai is sceptical about the impact Office for Java will have. However, at least one company is striking a great deal of its promotional profitability on Corel Office for Java.

ECG Technologies in Ottawa, licensed Office for Java from Corel for US\$8 million. The software is to be used as part of ECG's US\$40 million project to provide various software solutions to investment professionals, insurance agents, accountants and lawyers, said Todd Hespeley, managing director of ECG Technologies.

The various applications, leveraging Office for Java components, will run inside Sangha Pages, a pure Java client-server product from Sangha International in Burlington, Mass., that enables any Java-enabled browser to access applications on the server.

Applications will run on the Compaq/NC, Sun Microsystems' JavaStation, IBM's NetworkStation and other network computers.

With its Java suite in pre-beta, Corel is pushing Corel Office Professional, which includes WordPerfect 6, Quattro Pro 6.0, Corel Presentation 3.0, CorelLOW 2 business graphics, Sidekick/personal information manager, Errors and Dashboard, Paradox 5.0 relational database, GraphicsPlus 4.1 bitmap editor, plus 30,000 clip art images and 1,000 fonts.

The emphasis, once again, is on price. Until March 31, Corel is offering a cash-back promotion in North America for customers purchasing Corel Office Professional for Windows 3.1 or Corel Office Professional 7 for Windows 95.

Corel and Notesys, another Microsoft rival, are also offering customers a suite of integrated productivity applications. Corel has licensed Communicator, Netscape's new integrated suite of client software for open E-mail, groupware and Web browsing, and will integrate it tightly with Corel WordPerfect Suite 8 and Corel Office Professional 8.

Too Suite For Some?

Those who feel office suites have too many calories can turn to "skins" programs — lightweight suites that will pack a bundle of applications. Web versions that run on the Macintosh Windows 3.x

and Win95 platforms, Corel Works is a tightly integrated works program that can save end-users money and hard disk space.

Even Corel has recognized the value of giving users access to the Web. "We've added value in the box," says Nira Hart-Haft, managing director, Corel Canada Inc., who points out Corel Works 4.0 ships with Netscape for the Apple Internet Companion kit for Macintosh) and has an HTML translator enabling users to save documents for uploading to the Web.

Corel also has a new Internet edition, scheduled for release this quarter, that will include HomePage, a Web authoring tool.

So where does all this leave end-users and resellers? Well, it could be in a rather sweet position.

End-users finally have wise choices. And, if Java proves to be more than full of beans, there will soon be an alternative to Windows-based office suites.

Resellers should find that the proliferation of suites will create many service-oriented value-added opportunities: setting up applications, training users, creating vertical applications, connecting users to the Internet/intranet, and helping employees use suite applications to work closer together than ever.

So don't be surprised if you soon hear a reseller near you shouting, "How suite is it?" ■

Paul Lewis (toll@infowest.com) is a freelance writer specializing in high-tech and communications issues.

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Multimedia — Is MMX The Next Frontier?



VINTAGE COMPUTER

And while some analysts agree with the ratemonger king about the promise of the new offering, many industry players have yet to be convinced.

"Until major software vendors come out with products, it won't mean much," says Andrew Touloumis, vice-president of McGill Multi-Media Inc.

Larry Wasser, general manager for BeamScape Canada Inc., a major distributor of games software, adds: "In my view, the MMX chip won't make much of a difference until the end of 1997."

And for Alain Bouchard, vice-president of MicroFocus Inc., a games software vendor, the development of 3-D accelerator cards for his products interests him more right now.

This kind of discussion does not sit well with Doug Cooper, architectural manager for Intel of Canada Ltd. He says that prior to the introduction of the MMX technology in January, Intel worked with software vendors on new applications for two years in advance of the announcement. When the chip was unveiled to the world, six software vendors also had products available, many of them entertainment-oriented. Cooper predicts "a continuous stream of products" relying on MMX to provide full motion video, 2-D and 3-D graphics, image processing and interactivities, audio and speech synthesis, videodownloading and real-time animation. By 1998, all new PCs will be carrying the MMX chip, says Cooper.

Why this lack of excitement for a technology that many analysts are saying is the most important announcement since the advent of the 386 from Intel?

The obvious answer is the unavoidable time lag between the adoption of a chip by PC manufacturers and the availability of software that fully optimizes its advanced options.

Also, resellers and consultants are focused on the immediate sale

Intel Corp. is pushing its new MMX processor technology as the next great thing in the evolution of the multimedia market.

And while some analysts agree with

the ratemonger king about the promise of the new offering, many industry players have yet to be convinced.

Maybe the reason for this jaded attitude among some people lies with MMX's enhanced multimedia features, which are not a priority for corporate clients, who are primarily focused on productivity applications. "Business users will have to look a little harder for key reasons to adopt MMX," says Julie Kastlau, a software analyst with the Toronto-based International Data Corp. (Canada). She is more optimistic about corporate interest in Intel's next Pentium Pro, code-named Klamath, which combines MMX features with a faster clock speed of 233MHz.

But then MMX and Klamath are taking the personal computer further into the home entertainment arena, which should mean a host of new games and "entertainment" titles based on the MMX technology appearing on reseller store shelves over the next few months, adds Kastlau.

She expects the traditional early adopters of computer and multimedia technology in the consumer market to be the primary source for the demand of MMX-based applications over the next year or longer. "Once consumers become more educated on the benefits of

MMX — and Intel will certainly use all the heavy marketing and play over the course of 1997 to make this happen — and software titles become plentiful, we

expect MMX and other future multimedia technology to significantly boost consumer demand for PC upgrades," notes Kastlau.

This new direction has arrived at a time when personal computer purchases were down six per cent in 1996, while games software jumped 27 per cent, according to Markham, Ont.-based ACM Nielsen & Co. of Canada Ltd., which bases its analysis on sales at the retail channel. Also, both Toshiba and Sony are introducing reasonably priced, user-friendly personal computers with an entertainment, and possibly focus, says Darrell Rice,

the research firm's senior analyst in its

By Paul Weisberg





computer industry survives division.

Although not as much of a revenue generator compared to business applica-

already contain basic multimedia features, which then leads to the question of why that is marketed as a separate category at all.

"The industry does a lot of over-gilding and uses terms to describe a complex conception," says Kath Koch, president of Digital Renaissance, which is involved in a lot of software design, including enterprise-wide multimedia applications. "Multimedia is an overused term," he said.

Koch is concerned that in the rush for advanced technology, the point-and-click/tell-down aspect of searching on a Web site on the Internet goes against how users being normally seek out information. Multimedia technology can play a positive role here, he says. His preference is to adapt story-telling elements to Web site design, relying on sound, video and other

"Once consumers become more educated on the benefits of MMX and software titles become plentiful, we expect MMX and other future multimedia technology to significantly boost consumer demand for PC upgrades."

— Julie Kaufman

cations, games software is still becoming a significant product category because of the potential for high-volume sales and improved quality of the titles, says Rice. In addition, educational packages grow by a whopping 30 per cent last year, "where multimedia is playing a major part in the growth," he adds.

Yet, multimedia and business does not have to be mutually exclusive, says Robert Armstrong, vice-president of the Calgary-based DiscoverWare Inc., the developer of a training package that relies on multimedia to provide instruction in common business applications. He expects to have his product available soon on resellers' store shelves, priced at about \$100. "We want DiscoverWare to be sold as a productivity tool."

Armstrong describes the reseller channel as an untapped source for training versions. Because he has a corporate North America focus, the intent of the MMX chip has not as yet engaged his full attention. Many of DiscoverWare's business clients have low-end 486 machines, around which he has to try to fit a multimedia application. He estimates that about 20 per cent of training software contain multimedia content.

But this percentage is bound to go up, says Christiane Moret, IDC's manager of IT training and education at International Data Corp. Canada Ltd. "Multimedia is big deal in the design of training." Managers find it is cheaper to have their staff trained on standard applications on their own time at their desktop PCs, rather than send them out of the office for a lengthy period of all-day classroom instruction, she explains. It is perceived as more cost-effective, even though it may not always be necessarily true.

Multimedia applications have radically improved in the last few years and one area of increased activity is the design of Web sites on the Internet/Intranet, says Brian Kedler, president of the Toronto-based Dendritek Enterprises Inc., which has done plenty of work in this market.

But he adds that the issue for him in multimedia is not increased processing speed — which is what the MMX is all about — but the reality of broadband bandwidths that can occur while sending complex images and graphics through modems onto the World Wide Web. "MMX is not going to improve access to the Net."

Kedler who deals with business clients with low-end PCs who stay far from the most sophisticated and expensive multimedia for Web sites or presentations. "It is more likely software developers and consultants like ourselves who will use the high-end (upgrades)."

The term "multimedia" is not everybody's slaying, but then specialists in the field have difficulty finding an alternative. "New media," while also used, is often regarded out-of-hand as a descriptive term for the concept. The problem is that all high-end PCs are

The ease-of-use and experience that's part of the pleasure of multimedia is what appeals to Koch, who says people relate more to narratives or stories than the current way Web sites are typically structured. "It has to be something that is presentable. My life is more like an episode in ER [the television program]. The last thing I want is to drill down through a whole bunch of 'stuff'."

Paul Hirschberg is a journalist specializing in high-technology reporting and business based in Toronto. He can be reached at paul@interlink.ca



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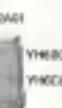
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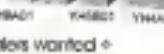
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Desktop Lasers

Printing Pretty For Cheap Drives New Potential Markets



by Jazz Bhowal, Tim Boughman-Wallis and Steve Hartland

Desktop laser printers have come a long way in the last few years. Both in terms of technology and their presence in the market. The investment in a laser printer is no longer a big deal, monetarily speaking.

Today's desktop lasers are priced well within the budgetary boundaries of most small office computer users. Lasers now are cheap, they print fast and produce high-quality output.

Niche Markets

Resellers need to know the printers they sell, and what they are and are not capable of doing. They need to know how each make of printer fits itself around the needs of a certain market of user.

Resellers can expect four main and discernible markets to purchase desktop laser printers: the average home market, the small office market, the graphics professional market and the small corporate market.

Home users are basically looking for sharp printing, primarily text-based.

The small office is essentially looking for quality text and graphics printing for basic needs. An ideal printer for this group would be the Brother HL-360 because of its very reasonable price and its all-purpose functionality.

Graphics professionals are looking to get a little more print out of their printer. Things

like printing speed and superior graphics output are important. A printer well-suited for this bunch would be the Lexmark Optra Ep because of its clearly superior output results.

The small corporate market is looking for high-speed results and quality to match. In a corporate office environment — high-volume and network printing are the buzzwords. A printer well-suited to these rigorous demands would be the HP LaserJet 6P.

So what features make a printer attractive? Well, depending on the market you look at, features such as paper selection, printing speed, memory, scalability, wireless connectivity, net-availability and pricing can all tip the scales.

Laserling Technology

When it comes down to it, the most important thing is the end result. It's all about the printed page and how it looks. Perhaps then, the most important factor governing print quality is printer resolution.

Printer resolutions are measured in dots per inch (dpi) and printers come in generally three classes: 300 dpi, 600 dpi and 1,200 dpi. Note that 300 dpi print quality is adequate for text-based printing. And 600 dpi, the next level up, will satisfy the majority of printing needs, while 1,200 dpi output concerns a small market requiring the extra resolution for high-end graphics and design work. Printer speed is also an important issue. Most desktop lasers operate between 4 ppm to 8 ppm, while some offer 16 ppm.

Depending on the application, required printing speeds will vary. For the home user market, 4 ppm should be more than sufficient. Speedy (and more expensive) printers are more necessary in corporate markets where printing volumes are high. A printer's availability can be an issue when graphical print jobs get more and more complex. Scalability is another important feature.

The ability to upgrade the printer with network capabilities, PostScript and more memory is important — even more so for commercial markets. Wireless connectivity is a handy feature but only for a small niche group of users. Infrared technology allows mobile computer users with laptops to have easy access to their printers without the wire mess.

Finally, net-availability is a necessary feature if any sort of printer-sharing over a network will be done.

The Tests

This issue, we tested nine desktop laser printers: the Brother HL-360, the Brother HL-380, the Hewlett-Packard 4L and 6P, the Lexmark Optra E and Optra Ep, the Okidata 400 and 600, and finally the Xerox DocuPrint 4508. They ranged in target markets from the very basic entry-level to those suitable for small business use. Their printing resolutions ranged from 300 dpi up to 600 dpi with output speed ranging from 4 ppm to 8 ppm. We asked that all printers be priced under the \$1,000 mark, give or take a few dollars.

Brother HL730 and HL760**Suggested Retail Price:** HL710 — \$799.99, HL760 — \$899.99**Street Price:** HL730 — \$549, HL760 — \$649.99**Reseller Authorization:** See Merial or ZMI Data Systems.**Marketing Support For Resellers:**

Reseller referrals

POP displays

National advertising

Maintenance And Technical Relationship With Resellers:

Two year warranty (DX models only)

Warranty includes parts and labor

Tech support for resellers

Dedicated tech and BBS

Web site includes technical information

Web site includes drivers

Reseller can offer service

Product Demands:

Available on a case-by-case basis

Demo Unit Availability:

VAR authorization programs are through Merial and ZMI Data Systems. Special demo pricing is available.

Brother's Share Of The Market And Positioning:

"The HL760 series is the only forward-laser capable of printing on large envelopes — up to nine by 12 inches. The HL760 is the

only 1,200 dpi class printer with a street price of under \$650," said Dan Courville of Brother.

Printer Strengths:

"Brother printers offer true laser quality at LED prices," said Courville.

E-mail For Channel Use:

dcm@brother.ca

Editor's Notes:

Brother's model HL-730 is aimed at both home and small business markets. The HL-730 is capable of printing at true 600 by 600 dpi resolution, while the HL-760 can produce output at up to 1,200 by 600 dpi. Each of these models produced great-looking pages involving both text and graphics, and both are rated at 6 ppm. The HL-730 has 512KB of RAM standard, and is upgradable using proprietary memory modules up to 1MB. The 760 comes standard with 1MB of RAM and is expandable to 3.5MB with the addition of industry standard SIMM modules. Both models use a straight paper path, which helps prevent paper jams and curls. Cartridge life is rated at 3,200 pages at five per cent coverage, and the units come with a starter cartridge good for approximately 1,000 pages.



Mar. 97

Xerox DocuPrint 450B**Suggested Retail Price:** \$999**Reseller Authorization:** None required**Marketing Support For Resellers:**

Marketing funds

Reseller referrals

1-800 customer inquiry and leads passed to resellers

National advertising

Marketing tool, with product launch, sales reference guides, monthly newsletters, monthly service, pricing and marketing bulletins

Fax-back system

Maintenance And Technical Relationship With Resellers:

One-year warranty

Warranty includes parts and labor

Optional three year extended warranty

On-site warranty available

Reseller can offer service with Authorized Service Provider authorization

1-800 tech support for resellers

Dedicated technical BBS

Web site includes drivers

Product Demands: Please call for bid pricing**Demo Unit Availability:**

According to Laurne Fielding, channel marketing manager at Xerox, "Xerox offers many of its desktop printers to resellers as part of a direct program. Xerox resellers may buy one of each model offered through the direct program through distribution every six months at a discounted price. Xerox Premier Resellers may buy one of each model offered through the Premier Reseller direct program every three months at a discounted price."

Xerox's View Of The Market And Future Positioning:

For Xerox, there are two target markets for its laser printers. "The Xerox DocuPrint 450B is targeted at both the SOHO and 'mid-size' set," and offers a ppm rating at a 6 ppm price," said Fielding.

Printer Strengths:

They include 100 fonts available with Xerox font manager, 600 dpi, 8 ppm, a high paper capacity (two-passed second tray), two paper trays, and a single sheet bypass," said Fielding.

**Xerox Channel Feedback:**

1-888-XFAX-BACK

Editor's Notes:

With print resolution of 600 by 600 dpi and a maximum print speed of 8 ppm, the DocuPrint 450B is well-suited for individuals with greater printing needs. Standard on the 450B is 2MB of RAM which can be easily upgraded to a maximum of 4MB with a T2-pair SIMM module. With an input paper tray of 250 sheets and support for a wide variety of paper types, the 450B is a ready-to-go, no-nonsense machine. Print quality was among the best of the printers in this survey. Text was solid black, and remained consistently sharp, all the way down to the smallest of fonts. Graphics turned out very crisp, but were slightly darker than expected. A few adjustments quickly cleared this problem up, however. Listed at just under \$1,000, this printer is ideal for a home office environment.

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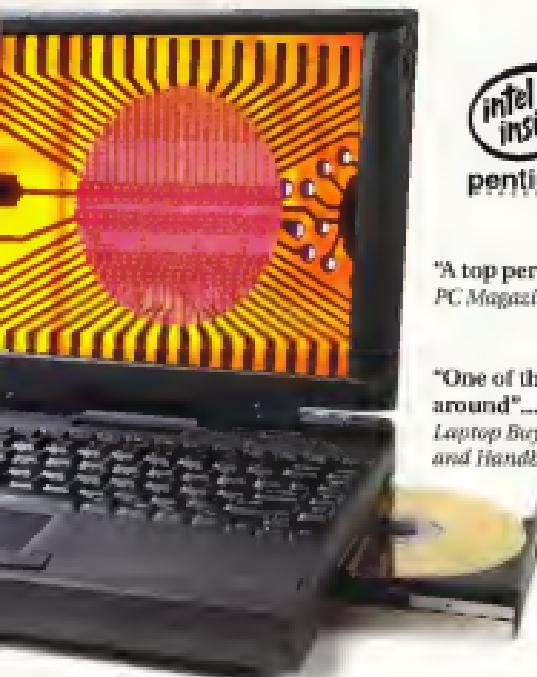
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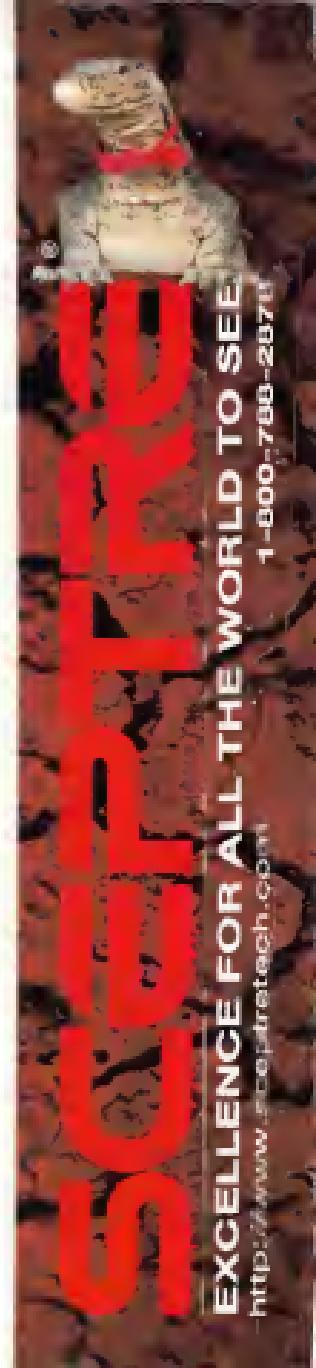
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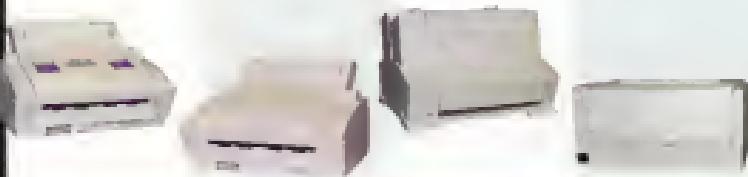
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Desktop Lasers



	Brother HL700	Brother HL790	Hewlett-Packard LaserJet 5L	Hewlett-Packard LaserJet 8P
Max resolution (dpi)	600x600	1200x600	600x600	200x200
Max print speed (ppm)	1	1	1	1
Memory (std/max)	1MB / 2MB	1MB / 2MB	1MB / 3MB	2MB / 5MB
Accepts standard SIMMs	No	Yes	No	Yes
Interfaces (standard)	Bi-directional parallel	Bi-directional parallel	Bi-directional parallel	Bi-directional parallel
Interfaces (optional)	Serial	Serial		LocalTalk, infrared
Resident Fonts	26	61	26	46
PCI/Postscript support	PCI, 512K RAM	PCI, 512K RAM	PCI, 512K RAM	PCI, 512K RAM
Standard Paper Capacity	100	200	100	250
Paper Sizes	Letter, legal, envelope, labels, executive, transparencies, A4, A3, B5	Letter, legal, envelope, labels, executive, transparencies, A4, A3, B5	Letter, legal, envelope, labels, executive, transparencies, A4, A3, B5	Letter, legal, envelope, labels, executive, transparencies, A4, A3, B5
Cartridge Life (pages)	2,200	2,200	2,500	4,000
Duty cycle (pages/month)			2,500	12,000
Physical Dimensions (inches)	14.6 x 13.9 x 9.8	14.4 x 15.1 x 9.8	13.3 x 13.3 x 9.9	15.15 x 17.52 x 7.87
Street Price (estimated)	\$599	\$649	\$599	\$699
Supported Retail Price	\$799	\$899	\$899	\$1,099
Reseller Price	N/A	N/A	N/A	N/A
Warranty	1 year	1 year	1 year	1 year
Contact	1-800-361-6468	1-800-361-6468	1-800-361-3667	1-800-361-2867
Web Address	www.brother.com	www.brother.com	www.hp.com	www.hp.com





Lexmark Optima E	Max. 57	Lexmark Optima Ep	Okidata Okipage fw	Okidata 9100w	Xerox DocuPrint 4500
600x600	600x600	600 dpi color	600x600	600x600	
4	4	4	4	4	4
1MB / 5MB	2MB / 5MB	1280 / 1280	1440 / 1440	2400 / 2400	
N/A	N/A	N/A	N/A	N/A	
Bi-directional parallel					
Serial, Ethernet	Serial, Ethernet				Serial
25	50	None	44	46	
PCI, G/None	PCI, G/Level 2 Emulation	PCI, G/None	PCI, G/None	PCI, G/None	
100	100	100	100	200	
Letter, legal, envelope, labels, executive, transparencies, A4, A3, B5	Letter, legal, envelope, labels, executive, letter transparencies, A4, A3, B5				
5000	5000	1,000	2,000	5,000	
10,000	10,000	1,000	8,000	10,000	
137 x 97 x 66	137 x 97 x 66	332 x 73 x 53	129 x 142 x 83	143 x 144 x 72	
574	51,200	540	560	564	
523	51,200	540	560	560	
525	51,200	540	560	564	
1 year					
1-800-259-5105	1-800-259-5105	1-800-254-2110	1-800-654-2210	1-800-521-2150	
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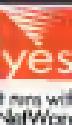




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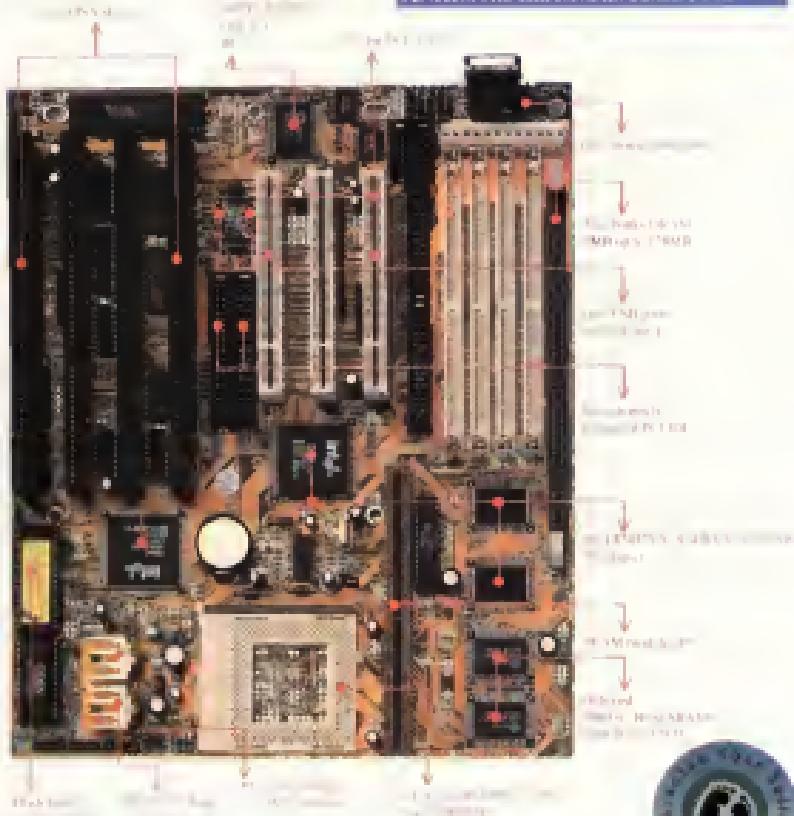
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1000

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P54CS/P58C/P58CT)
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150/ 166 MHz and 130/
200 MHz (ideally).
Cyrix 6x86-
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P133-H/110MHz/
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Lexmark Optra E and Optra Ep

Suggested Retail Price: Optra Ep — \$1,240, Optra E — \$803

Street Price: Optra Ep — \$1,069; Optra E — \$719

Reseller Price: Optra Ep — \$945; Optra E — \$665

Reseller Authorization: None

Marketing Support For Resellers:

Co-op advertising through distributor

Reseller referrals

POP displays

National advertising

Literature support

Assigned manufacturer's representation

Maintenance And Technical Relationship With Resellers:

One-year express warranty includes parts and labor

1-800 tech support for resellers

Dedicated technical BBS

Web site includes technical information and drivers

Volume Discounts: Discount with distributor

Device Unit Availability: Special purchase prior to reception

Printer Strengths:

"The Optra Ep personal laser printer is an outstanding personal desktop laser solution for people who want a business-class printer at a consumer-class price," said Prashan

E-mail Address For Channel:

distinfo@lexmark.com

Editor's Notes:

This month, we received two very similar printers, the Optra E and Optra Ep. Each model features the 600 by 600 dpi printing at up to six pages per minute. The Optra E comes standard with 1MB of RAM and is expandable to 3MB, whereas the Optra Ep has 2MB as standard and can be expanded to 6MB as well. The Optra E also supports 16MB of flash memory, which can be used to store anything from frequently used fonts to forms to menus. Both models feature 15-second setup times, cartridges rated at 1,000 pages, duty cycles of 10,000 pages per month and optional networking support. The most notable difference in the two models is that the Optra Ep adds Postscript Level-2 cartridges support as well as 86 resident fonts — that's 60 more than what is found in the Optra E. Our printed tests turned out just as we had expected — excellent. Text was sharp and black. Graphical images were printed with excellent halftones, and there were no signs of streaks or smudging.



Mar. 97

Okidata Okipage 4w (DL400e)

Suggested Retail Price: OP4w — \$499, DL400e — \$669

Street Price: OP4w — \$400, DL400e — \$530

Reseller Authorization: Not required

Marketing Support For Resellers:

Co-op advertising

Marketing funds

Reseller referrals

Dealer-specific space on Web site

POP displays

Maintenance And Technical Relationship With Resellers:

One-year warranty includes parts and labor

1-800 tech support for resellers

Dedicated technical BBS

Dealer-specific space on Web site

Web site includes technical information and drivers

Volume Discounts: On a case-by-case basis

Device Unit Availability:

For authorized resellers, or through the Okidata territory sales manager

Printer Strengths:

"They offer 'low cost-per-page, especially compared to ink-jet and toner to print page, and high reliability,'" according to Owen McPherson, of Okidata.

E-mail Address For Channel: comms@okidata.com

Editor's Notes:

Okidata 4w

The 4-page Okipage 4w is Okidata's latest entry-level design, aimed primarily at the home user. This 4-page GDI printer inde-

pendently supports for PCL emulation, meaning you'll need either Windows 3.1 or Windows 95 to use it. Support for DOS applications is provided, but you'll have to be in a Windows DOS package to use it. The Okipage 4w is a 600 dpi class unit which managed to surprise us when it came to reviewing its print samples. Text output was a solid black, and incredibly sharp, even on small fonts. Graphics looked good, but we had to tweak the contrast levels a couple of times before our graphical images came out looking the way it did on other printers. The 4w comes with 128KB of RAM, which cannot be upgraded, meaning you'll have to afford it to use your PC's memory to print complex images. It brought before March 15, 1997, Okidata will throw in a bottle of printer wash (approximately \$140). The printer has a one-year overnight exchange warranty, and an attractive price tag.

Okidata DL400e

The DL400e is in a different class than its 4w counterpart, aimed more towards the SOHO market. The 600e features true 600 by 600 dpi printing at up to 6 ppm. Standard configuration includes 1MB of RAM, which is expandable to a total of 16MB. The printer is a good performer, delivering solid black text and well-approximated graphics. The standard paper tray may hold up to 100 sheets, cartridge life is rated at 2,000 pages, and the unit's duty cycle is up to 6,000 pages per month.



Hewlett-Packard LaserJet 5L and LaserJet 6P

Reseller Authorization Requirements

Reseller authorization is completed by distributor Beauscope, Intron, CMC, Marval and Globelis.

Marketing Support

Co-op advertising.

Marketing funds.

Reseller referrals.

1-800 lines to resellers.

POP displays.

National advertising.

Public relations and marketing communications support.

Manufacture And Technical Support

One year warranty including parts and labor.

1-800 technical support for resellers.

Dedicated technical BBS.

Web site includes technical specifications for all HP products.

Web site includes drivers available for download.

Volume Discounts: None

Product Positioning

Hewlett-Packard positions its lasers for two distinct markets. "The HP LaserJet 6P and 6MP are powerful monochrome laser printers for small office and home use," according to Linda Blakely of Hewlett-Packard. "The printers are expandable, allowing small work groups and advanced individual users to add networking capability and additional memory as their business needs grow."

The HP LaserJet 5L printer is for personal use," says Blakely. "The LaserJet 5L printer delivers personal laser printing by giving customers new levels of performance and confidence in printing for a very low price."

Editor's Notes

Hewlett-Packard 5L

HP's entry-level machine for our survey was the LaserJet 5L.

Popular among many, the 5L is a 4 ppm printer capable of resolutions up to 600 by 600 dpi and comes standard with 1MB of RAM, upgradable to a maximum of 8MB using proprietary modules. The 5L supports PCL 3 emulation, and comes with 26 resident fonts. Toner life is rated at 2,500 pages. Output quality of text and graphics was good with no discernible problems noted.

Hewlett-Packard 6P

Armed more toward the SOHO and business users, the LaserJet 6P offers several features not found among printers of the same class. First, there's print speed, rated up to 8 ppm. It has a print resolution of 600 by 600 dpi and comes standard with 2MB of RAM, upgradable to 8MB in total, using industry-standard 72-pin SIMMs. Standard port configurations includes both a large and small parallel port as well as LocalTalk and infrared ports. The 6P supports the new PCL 6 format, and comes with 46 resident fonts. Cartridge life is rated at 4,000 sheets, with a duty cycle of 1,000 pages per month. Our test prints were covered excellent text and graphics.



It's hard to recall a time when choosing the Editors' Choice was so difficult. All of the printers we've looked at this month are very capable, and would make a great addition to any home. What makes things so difficult is the broad range of features and prices that are found among the group. A feature that is lacking in one printer with a low price tag may be included in another one with a much higher price tag. So how did we end up picking our winners? With one simple question: which printer would we buy and take home to call our own?

Performance

LaserJet 6P

In the category of performance, the OptiJet 6P gets our vote. It had all the qualities we wanted in a printer: excellent output quality, fast print speeds, expandability and reliability, and uniqueness.

Overall Value

Brother HL-760

If you want to offer your customers a printer that has a little bit of everything, we suggest the Brother HL-760. It offers 1,200 by 600 dpi printing, delivers quick output at 8 ppm, and is easy to set up and use. And if your customers ever want to increase the onboard 8MB, it can be done easily, thanks to support for standard SIMM modules. Cartridge life is at 2,500 pages (which reduces the cost-per-printed-page), and at a \$649 estimated street price, the HL-760 delivers solid performance at a very reasonable price.



Ink-Jet Printer Wars Heat Up

Resellers Note: There Are Major Price/Performance Enhancements

by Jeff Kraus

In the 1990s, the ink-jet printer has come to overwhelmingly dominate the SOHO (small office/home office) printer market, to the detriment of personal laser printer sales. According to some figures, ink-jets are outselling lasers by a factor of nearly 10:1 in the personal and home office market.

The ink-jet has surged because of technological advantages that have enabled ink-jet printer resolution to (and beyond) laser levels, lower prices, and color.

Color, more than anything else, has been the ink-jet's trump card — especially in homes and offices where education (read: kids), entertainment, and marketing/communications applications are present. Also, ink-jet printing speeds have increased steadily, to the point where black and white ink-jet printer output is nearly as fast as black-and-white laser output.

The Contrarian View: The Case For The Laser

Although it is now a minority choice, the

laser has a number of persistent advantages over ink-jets. For one thing, it is still generally considered faster than ink-jets. For another, text output is usually rendered finer, even at supposedly the same dots-per-inch resolution. As well, PostScript is more widely available as an option

for lasers. **In SOHO environments where a fair amount of black and white** (B&W) **output is usually required, many people will opt to have a** **black-and-white laser plus a color inkjet if the budget permits.**

For the laser, the ink-jet's trump card is affordable PostScript compatible printers, and most importantly, the cost of supplies is lower for lasers than for ink-jets.

It is one of the secret strengths of ink-jets that particularly of late become addicted to the saturated color eye candy an ink-jet can crank out, it is easy to spend as much on ink cartridges per year as the ink-jet printer itself costs.

In SOHO environments where a fair amount of black and white output is usually required, many people will opt to have a



Black-and-white laser plus a color inkjet if the budget permits. For the reasonable user, though, the ink-jet rules the road.

printer market. The major contenders are Hewlett-Packard, Epson, Lexmark and Canon.

All have spent huge amounts of money driving a rapid advance in printing technology. HP has been the historical leader, but a new line of Epson ink-jet printers may give HP a hard run for the money in 1997. **ED**

Jeff Kraus is Technical Editor for Computer Wholesaler. He can be reached at jkraus@pacifier.com

Epson: The Next Generation?

Epson Canada Ltd. announced a new line of ink-jet printers on March 3. The Epson Stylus 400 is a budget, entry-level printer for the home which offers up to 720 by 720 dpi photo quality color output, and 720 by 720 dpi photo quality black text, at print speeds of up to 3 ppm for color text (five per cent coverage) and 4 ppm for black-and-white text. The Stylus 400 comes with Windows 95 and Windows 3.1 drivers and a bundle of consumer graphics software, including the Look Your Best Color Pack. This bundle includes Sigma PhotoArtist for Windows, Adobe PhotoDeluxe for Windows, Puristic Prints, stock photos, and a tutorial.

The Epson Stylus 600 is a mid-range SOHO printer, with resolutions of up to 1,440 by 720 dpi, and print speeds of up to 6 ppm for black text, and up to 4 ppm for color text, plus serial and parallel bundle offerings as the Stylus 400.

The big surprise is the Epson Stylus 800, with dual 1,440 by 1,440 dpi print reso-

lutions, up to 8 ppm for black text, and 7 ppm for color text. Special photo quality QuickDye inks are available, for quality image output.

High-speed parallel and serial connections (both Windows- and Mac-compatible) are standard. Internal Ethernet and LocalTalk network interfaces are optional, as is a plug-on Adobe PostScript Level 2 driver with PostScript approved colors, and a 3 year warranty. The Epson Stylus 800, therefore, straddles the high end of the SOHO market and the entry-level professional graphics market. A Windows NT driver, and a Mac driver are available as well. Windows 3.1 and Windows 95 drivers.

The new model's high print quality at a low price is made possible by Epson's piezoelectric technology, which uses electronic pulses to shoot ink precisely through apertures in the print head, forming extremely clean dots and lines on paper. Epson claims that piezoelectric ink deposition results in higher quality images and



text, and samples shown at a product preview recently seemed to bear out that contention. The new Epson printers all give good results on ordinary bond paper, and superb quality on more expensive coated stock.

The tendency of the leading ink-jet printer vendors in recent years has been to inspiring each other in terms of basic technology and price/performance. Epson, however, by doing a more differentiation of three quite different products that span the market from the \$100 entry level to \$1,000 (with optional) professional level (and all with significantly improved speed, resolution and print quality), may have gained an edge on the competition. **ED**

For more information visit <http://www.epson.com> or call (404) 488-5933.

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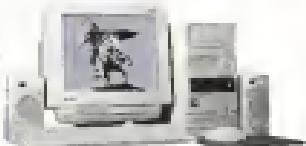
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Laser Printing:

More Than Meets The Eye

by Jeff Smith



Better than you might imagine, the office laser printer as we know it today will be history. For Canadian retailers, an awareness of needs in document management and office document products will be key to future success.

Today's laser printers, for the most part, do basically the same thing they did 10 years ago: they print paper. Typically, the user sends a job to the printer and only when physically viewing the printer can the user discover whether the job was successful. Consequently, a lot of time can be spent each business day walking or running from desktop to printer to desktop to printer to desktop.

Tomorrow's office laser printers (and even a few printers that are available today) will be smarter machines that will allow users to view the print status of their print jobs directly from the desktop, from station to paper tray in use, or sooner replacement warnings. Not only that, but these printers will be paper handling experts, normally only found in photocopies or production printers, like collating, stapling, diecutting and offset sorting.

It's all part of the transformation of the office to a total digital environment, where competing technologies will be far easier because of their compatibility.

With the advent of newest productivity solutions, the management of print over company networks will be a significant trend in the future. Laser printer manufacturers are already developing software and hardware

cycle for organizations of all sizes, from the individual to the home office.

Document management is all about improving the flow of information within organizations, creating transparent links between the stages of the document life cycle, and eliminating barriers between people, digital information, and printed output.

Document management involves everything from the company intranet, the Internet, the local area network, CD-ROM applications, imaging technology, and basically everything that involves the communication of ideas.

Office technology solutions, the products we use every day all day, are the backbone

"Document management is all about improving the flow of information within organizations, creating transparent links between the stages of the document life cycle, and eliminating barriers between people, digital information, and printed output."

bone and sinew of the business document. Managing these solutions, and making them most productive, is the challenge of today's document companies.

Relative to laser printers, photocopies and production printers have developed at a much faster rate. Although printer resolution, speed, connectivity, and reliability have all improved, on their own, they have not been brought together very well. There is no reason why laser printer manufacturers cannot take technology and productivity concepts found in photocopies and production printers and apply them to their products.

It is a fact that with today's printer man-

ufacturers. While using the photocopies for large or duplication jobs is still more practical producing a few duplicate documents using the office laser printer is often more convenient and less expensive.

We will see a rapid change in the way we view the office laser printer, and much of the technology is already here at the higher end of the market. Networked workgroups can already take advantage of multifunctional productivity tools combined in a single device that can print, copy, collate, fax, staple and sort jobs with the worker never having to leave the desk and ready to pick up the finished document.

The laser printer should do more than just print. It should interact and communicate with the user. Office printing isn't just about spewing out pages, it is about being more productive and making work easier, which all boils down to improving the bottom line.

Printing productivity, however, only begins with the hardware, the user tools and user interface of the machine. In the near future we will see printer technology software concepts considered applicable only to software. The last part of the 1990s will see dramatic improvements in the way printers work with the user, and the way the user is able to control the flow and distribution of paper from the device.

The office environment of tomorrow will bring digital document technologies together in ways that will mean one thing for office workers: improved productivity. Advances in printer productivity will be as much through software and firmware developments as they will be with the hardware itself.

The era of the dumb laser printer is over; the productivity printer is about to have its day.

Jeff Smith is director, desktop printer marketing, of Xerox Canada's Desktop Products Group — a developer and manufacturer of laser printer and office technology solutions.

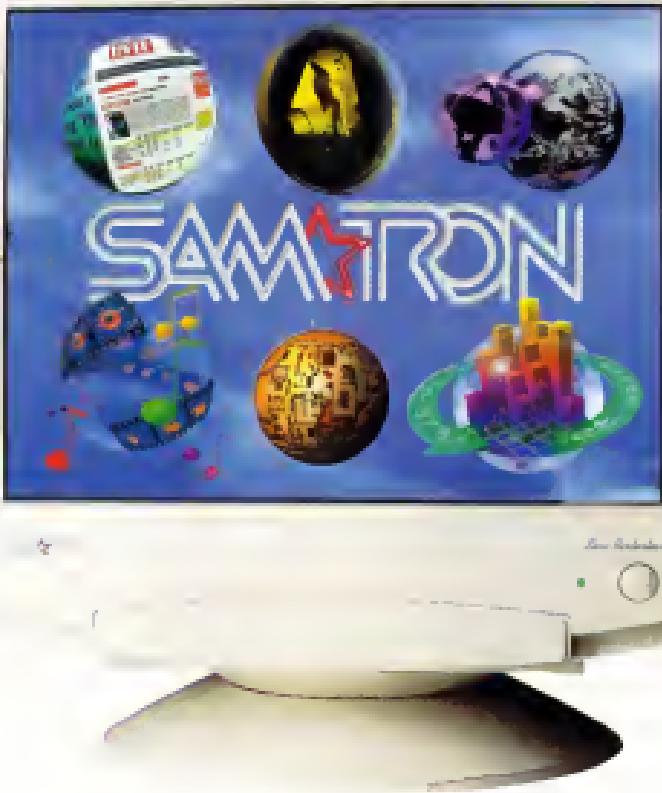
"The office environment of tomorrow will bring digital document technologies together in ways that will mean one thing for office workers: improved productivity."

productivity tools that allow businesses to manage printers in remote locations over the corporate network.

"Document management" is a term used rather loosely these days. Most people visualizing high-end document imaging, archival and retrieval systems, but the topic should be considered on a broader level. Document management includes all stages of the document

lifecycle: ease of use and functionality have been left to lag behind. Unfortunately they have put much more emphasis on speed and output quality instead of ease usability and productivity — concepts found in photocopies and production printers.

Laser printing has become so inexpensive and reliable that many offices use their printer instead of their Xerox copier to make



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The Business Partnership Agreement:

Don't Leave Home Without One

by Douglas Gray



As a computer retailer, if you are currently in business with other partners, or you are thinking about it, it is essential that you have an agreement setting out "what-if" scenarios with formulas for resolution.

As most retailers are probably operating as incorporated businesses, you would technically call it a shareholders' agreement, as I will use that terminology.

Types Of Conflicts

The reason you want to have an agreement is that you want to be cautious. The casualty rate of business partnerships is very high. There can be many factors causing a conflict. Over a period of time, it is not uncommon at times of human dynamics to have potential conflicts occur due to differences of personality, personalities, or philosophies. In addition, there could be differing expectations by each of the individuals in terms of the contribution of time, money and talent. Other factors that tend to cause friction include the issues of ego, money, and power — three areas that are frequently the undoing of business relationships.

Business conflict usually results when conflicts occur, for example, when the business is doing very well or very poorly. Another factor is a birth or life-style changes. Many people get tired after awhile of the time, energy, and commitment involved in a business operation and want to do something else — go into another business or otherwise free up their money that is invested in the business. These can be mental or health problems that cause a person to lose interest in the business or create conflict within the business.

For these reasons and the various implications that would result, you should have a shareholders' agreement to protect your interests. For obvious reasons, you should have the agreement done concurrently with the incorporation or business start-up, during the honeymoon phase of the business relationship.

However, if you have not yet prepared an agreement, don't hesitate any longer. The

down side if you don't have an agreement, is that if disagreements occur there is no framework for resolving them. Each partner will have to retain their own lawyer, plus the corporation will have its own lawyer. Legal fees can go up exponentially, and a resolution, if one can be attained, can be expensive, protracted, stressful and uncertain. Business owners who don't prepare for the unknown by having a shareholders' agreement, end up providing the legal profession with a built-in attorney program.

Clauses To Consider

As noted earlier, the agreement sets out methods of resolving potential disputes and other issues. For example, an agreement could include clauses of duties and responsibilities, life insurance on partners, powers of director, selling the business, share sales and transfers, shareholder investment, loans or guarantees, division of profits and losses. Some additional provisions include buyout arrangements, financial contributions on purchase, intention to terminate, signing authorities, management powers of partners and limitations, drawing arrangements and benefits, buy/sell obligations, sale and purchase of partnership interest, and terminating powers of the company. And this is just a partial list. You can see what potential risk areas you have not dealt with, if you don't have an agreement.

One of the key provisions in a shareholders' agreement is a buy/sell provision.

Over a period of time, it is not uncommon in terms of human dynamics to have potential conflicts occur due to differences of priorities, personalities or philosophies.

You may want to buy out your partner, or vice-versa in certain situations, such as a disagreement or a change of priorities. This would be referred to as a voluntary buy/sell formula, in that my partner could use that clause. Then there is a compulsory buy/sell clause, which deals with issues such as death,

mental or physical incapacity, bankruptcy, termination of employment or default of terms of the agreement.

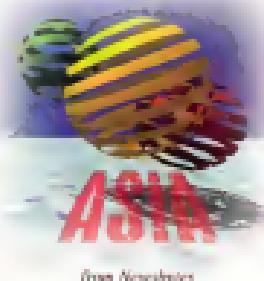
Drafting An Agreement

If you don't already have an agreement, draft your own version of the key factors that you would like included in an agreement, after discussion with your partners. Then take your draft agreement to the lawyer being retained for the business, to be reviewed, clarified, modified and finalized. Make sure you have your own independent legal advice. Every partner should, do this, as the corporate lawyer cannot also advise the individual partners. This would be a conflict of interest. If you do have a shareholders' agreement, you should review it at least once a year, as well as when any significant issues face the company or shareholders.

The legal costs to prepare a shareholders' agreement ultimately depends on the time expended by the lawyer. For example, the degree of complexity of the agreement, the number of shareholders involved, the number of meetings that might be held going over and explaining the various terms of the agreement, and other factors. It is to your benefit to retain a lawyer who has expertise with shareholder agreements. The rough and expensive will be unavoidable. At an average charge-out rate of \$150 or more per hour, you should expect the lawyer to spend a minimum time range of from five to 10 hours (\$750 to \$1,500-plus) for a basic shareholders' agreement. More complex corporate arrangements or clauses will obviously cost more to deal with.

It's cheap money for peace of mind, especially considering the alternatives. And, it's a tax deductible business expense. ■

Douglas Gray LL.B. has had extensive experience as a lawyer specializing in small business. He is also a speaker and author of 13 business books plus a real estate investment software program. His books include *Home Inc.*, *The Canadian Home-Based Business Guide* and *The Complete Canadian Small Business Guide* (both by McGraw-Hill Ryerson), *Start and Run a Profitable Consulting Business and Marketing Your Product* (both by Self-Counsel Press).



from Newsweek

McAfee may buy Japanese software producer

McAfee Associates Inc. is planning to buy Japan's leading anti-virus software maker, reports the *Nihon Keizai Shimbun*. The newspaper said the company will pay 1.2 billion yen (US\$10.98 million) in early March for Shizuoka-based Isca Co.

The Japanese company is having trouble keeping up-to-date with new viruses, and the management, therefore agreed to the buyout, according to the report. After the purchase, McAfee will use Isca as a launch pad for its own software in Japan.

On-line commerce in Asia will boom

US\$129 million will be spent on Internet commerce this year in Asia, excluding Japan, predicts the technology consultancy. International Data Corp. (IDC) also predicts this measure, a substantial portion consisting of Internet-based shopping, will explode to US\$1.14 billion by the end of the year 2000.

"There's a low base (of users) but there will be staggering growth," said Dennis Phillips, vice-president and managing director of IDC Asia-Pacific.

According to IDC, Internet retail includes products ordered via the Internet but paid for via conventional means, like telephone or fax. Phillips predicted that despite HKTel's introduction of video on-demand, which promises to bring big local retailers on-line, growth in Internet retailing in Hong Kong will not be "a tidal wave."

Part of the problem is "culture" — Asians tend to be less familiar

than Westerners with shopping via mail-order or telephone.

Phillips predicted that Internet commerce as a whole will take off first in Australia and Japan. Acceptance in Singapore will also be high, due to a strong telecon infrastructure and government support, though the local market will be smaller than Hong Kong, he said.

IDC also released figures for growth in Internet usage in Hong Kong. There were 114,000 Internet users at the end of 1998, compared with 60,000 at the end of 1997. About 225,000 people will use the Internet in Hong Kong by the end of this year, 572,000 by the end of 1999, and one million by the end of 2000. Phillips also said that many of the ISPs in Hong Kong were "extremely vulnerable," due to low profit margins in the consumer dial-up business. He predicted that only a few large ISPs would soon remain.

Internet usage in Hong Kong

End of Year	Internet Users
1997	60,000
1998	114,000
1999 (estimated)	225,000
2000 (estimated)	572,000
2000 (estimated)	1,000,000

from www.idc.com

Sumitomo to offer VeriFone-based Internet commerce

In announcing its first customer for Secure Electronic Transaction Port Products, Redwood City, Calif.-based VeriFone Inc. says Japan's Sumitomo Credit Service Company Ltd., a major credit card issuer, will offer its merchant customers a secure, end-to-end Internet-based payment processing system.

The Secure Electronic Transaction (SET) Port Product range consists of three main parts: the Vpos, Vgate, and Vwallet software. The first application, Vpos, allows merchants to accept, authorize and manage credit card payments on-line in a secure environ-

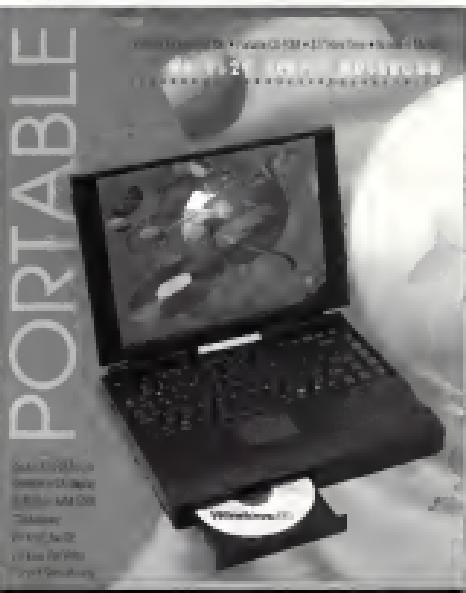
ment. The second application, Vgate, is a gateway for financial institutions and payment processors to accept and process Internet transactions. Vwallet is a payment application for customers to allow SET-compliant credit-card purchases. The system complies with the MasterCard/Visa SET protocol.

Sumitomo Credit Service will begin a trial of the software in Japan in the second quarter of 1997 and will involve a group of its credit-card issuers, said VeriFone. The company has 14.7 million credit cards and 1.7 million merchant customers.

Matsushita launches new notebooks

Matsushita Electric Industrial Co. is selling a new version of its mid-priced ProNote notebook computer, expanding the ProNote 10 series.

As with previous models, the hard disk drives are mounted with a shock-absorbing gel to guard against damage when knocked, the screen is protected by internal dampers, and the entire machine is built inside a frame of magnesium alloy. Matsushita says the computers can withstand drops of up to 30 cm and will also happily cope with vibration, dust, moisture, and even a splash of coffee on the keyboard. The new computers feature a 12.1-inch color LCD, compared to a 10.4-inch display on the earlier models. **ED**



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The Secret Of 'Piggybacking'

by *Maria Kerr*



Fact is, most computer resellers don't have time to be marketing geniuses.

Resellers are often experts when it comes to knowing products inside and out, and can provide the advice and services necessary to ensure the customers are satisfied. You make it your business to understand the customers' needs.

But with the increasing demands on time and financial resources, there is just no way to devote yourself to marketing on a broad scale in, well, Resellers are feeling the squeeze more than ever on marketing budget. From advertising to direct mail, in-store demonstrations, trade shows and public relations, all the necessary marketing work can be a daunting task.

However, there is a place resellers can turn for help — and that's the vendors.

In this day and age, no company can afford to be an island unto itself. Both large and small players in the world of high-tech depend on partnerships with other firms in order to achieve success. No one company in the IT sector can provide all in one custom solutions for the masses. Just look around your own office for proof. Hardware, soft-

"Talk to vendors if you are interested in taking advantage of their marketing strategies. But don't expect to get a free ride just because you offer a solution based on a vendor's product."

ware, operating systems and networks all work in harmony (most of the time), and are provided by different vendors. Technology companies, both big and small, realize that some of their growth and profitability is directly linked to their partners.

As a reseller, you are dependent on the manufacturer in many ways, not least of which is to provide a solid product that you can feel comfortable selling to your customers. What you may not realize is just how much the manufacturer depends on you — and how you can take advantage of this relationship to expand your marketing efforts.

You are probably aware that many OEMs and distributors offer co-op funds, but

you may not know that you can also take advantage of a manufacturer's public relations efforts — at little or no cost at all. Whether you're a value-added reseller or systems integrator, there are numerous ways to tap into a manufacturer's public relations activities — as long as it makes sense for both

"Whether you're a value-added reseller or systems integrator, there are numerous ways to tap into a manufacturer's public relations activities — as long as it makes sense for both parties."

parties. A lot of companies are eager to have their customer and business partners in the public eye, because that can provide a strong third party endorsement of the products.

Here are just a few of the ways you can make this strategy work for you:

Software Vendors

Many large software developers, such as Microsoft and Lotus, are successful because of the strength of their resellers. In Canada, there are hundreds of Microsoft Solution Providers and Lotus Business Partners actively selling and marketing Microsoft and Lotus products.

When these software giants find innovative applications of their products, they

spotlight the reseller, the client and the solution in the media. There are numerous ways in which resellers can leverage publicity from major software companies. Resellers can be included in press releases, case studies, announcements and newsletters. All of these publicity-related activities highlight the reseller and in turn give the software vendor an all-important third-party testimonial.

Hardware Manufacturers

Hardware companies in Canada also work at marketing with their channel

partners. Forming solid relationships with the dealer channel is crucial to their businesses. Many public relations agencies working on behalf of large hardware firms will help promote small SIs and resellers if they develop solutions that showcase the hardware technology. Partners for large

OEMs will often include VARs and SIs in press releases — free of charge — if the software they offer are unique. Resellers can also reach the media if they have been involved in philanthropic and sponsorship programs with an OEM.

Talk to vendors if you are interested in taking advantage of their marketing strategies. But don't expect to get a free ride just because you offer a solution based on a vendor's product. Before you approach any vendor for help, be sure of two important points — prove there's a definite return on investment for the vendor in supporting your efforts, and demonstrate that you can move more product for them with their help than without it. Be willing to follow the vendor's lead, work hard and enjoy the results of your joint efforts. *ME*

Maria Kerr is a counsellor in the Technology Practice at Colle & White, a public relations firm in Toronto. She can be reached at maria_kerr@collewhite.com.



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Volatility In The High-Tech Market — What Does It Really Mean?

By Thomas Klein



As a reseller, you may be watching the rise and fall of high-tech stocks, in an effort to gauge the health of the industry and of particular companies. However, the recent downward fluctuation in the technology stocks should be seen as healthy. It's not an indication that next year's growth will be slowing down.

Stocks move up or down for many different reasons. Investors tend to overreact to both good and bad news. Investors who jump on the bandwagon when a stock is going up drive the stock price higher. But this creates a problem, as momentum investors are short term traders and have conflicting goals with investors who are buying quality companies, and holding them for the longer term.

This is the important question when a stock price drops. Is it being driven down by some fundamental change — or because some short term investors are moving onto their next idea?

Sharp drops in stock prices in a short period of time usually result from traders unwinding their positions. However, if a stock's price continues to slide over weeks, this is an indication that something is fundamentally wrong. Slowing of sales or earnings, increased competition, lack of management focus or any number of factors can will affect the company's profitability.

Networking

Since July of 1996 the technology sector has been on a strong upward move and this carried through to the beginning of the new year. It is not realistic to expect that these stock prices could maintain that level of performance. This is a case of the stock market prices getting ahead of the growth of the companies. A perfect example is the performance of networking companies. In the past few weeks, several of the major players have seen reduction of their stock prices by more than 20 per cent.

This is not related to any reduction in sales or growth targets but rather profit-taking by sophisticated traders realising when mid-tops in stock prices have peaked. Most of the networking companies would not be able to sustain the growth that their stock prices warranted. Resellers should not be concerned that we are

headed for slowdown in growth. This is just a consolidation phase where earnings growth and stock price valuations adjust and become more in sync.

Also of note: IBM, 3Com and Cascade announced that they are forming an alliance to compete with Cisco Systems. I think that the negative sentiment in the market for network stocks, plus the threat of increased competition will put pressure on Cisco's stock price. It's time to monitor this sector for any new trends and during this phase it's best for investors to stay on the sidelines until a support level can be established.

Hardware

In the hardware department, IBM announced it would be splitting its stock. A stock split occurs when the directors and shareholders agree to increase the number of available shares and adjust the per-share price. Most often stock splits are carried out two for one. For example, if 100 shares of IBM are trading at \$150 when it splits, you will have 200 shares at \$75.

Although this transaction does not affect the financial numbers of the company in any way there are a number of benefits for a company to split stock.

It increases the number of shares, and for some smaller companies it creates liquidity or the ability for a larger base of shareholders to purchase stock.

It keeps a company's stock price in what the brokerage industry calls retail-friendly ranges. I am always amazed how many investors think that a \$10 stock is cheaper or better than \$100 stock. In IBM's case, it is easier to sell shares at \$75 rather than \$150 even though there are just more shares outstanding at a lower price. The net effect is that after a stock split the perceived lower price makes a company more marketable — which can cause a run-up in price.

Apple Computer unveiled a new corporate organisation, but it was met with a cool response from analysts and investors. Shares in Apple hit a 10-year low at US\$31.375, after an unexpected US\$120 million quarterly loss. To strengthen its focus, the company is looking at the possibility of selling the slow-growing Newton handheld computer division. Even with the announced changes it seems investors are likely to give Apple another chance.

Chips

The big news in the chip stocks was the ratings downgrades of Intel — from buy to hold.

Intel has had an miserable year. Investors who bought in August have more than doubled their money, even if the stock now drops 10 to 20 percent.

The new product cycle being developed with MMX technology will likely keep this company at the top for years to come.

Motorola has also slowly but surely recovered from last year's disasters and if the recent stock price climb is any indication it looks like management has this company back on track.

Software

Microsoft continues to run like a well-oiled machine, launching two new additions of Office '97. Plus, the company has made significant gains in market-share in the browser market with Microsoft Explorer, at the expense of Netscape. Microsoft and Intel are as close to a monopoly as you're going to get in the technology sector. It is this lack of significant competition that

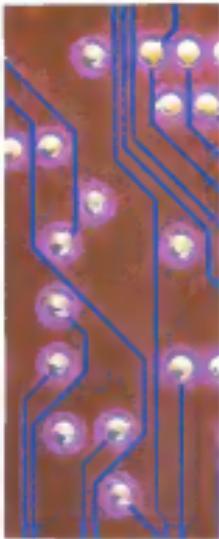
makes these companies excellent investments.

In database software, Oracle has signed a proposal with Harcourt to distribute up to 500,000 network computers throughout China and Southeast Asia. The Network Computer-Harcourt venture, called the Pacific Net Project, will be working in conjunction with the decision by the government of China to move towards the electronic linking of all high schools and universities.

This is definitely a development worth watching.

Dennis Klein is an investment executive with *Scion/McLeod* and can be reached at <http://www.scionmcl.com/money>.

Technology Sector Highlights				
Sector	Company	Year Low US\$	Year High US\$	January Average Closing US\$
Chips	Intel	58.58	125.00	103.00
	Motorola	44.125	66.75	60.00
Computers	IBM	69.125	170.125	145.625
	Apple	15.125	30.125	16.00
Software	Microsoft	47.98	105.800	87.00
	Oracle	26.50	51.80	40.00
Networking	Dell	40.50	75.75	61.00
	Novellus	CS27.75	CS51.80	CS43.50



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PO May Be A Solid Niche Market

Yet, point of sale has its challenges.

Different markets have varying needs and new technologies are still emerging.

by Geoff Wheellwright

The world is buzzing with talk of electronic commerce, home banking and Web-based business, yet the sector of the computer industry that is currently doing the most work for small stores rarely seems to get much attention.

Of course, point of sale (POS) systems can offer huge advantages for retailers that use them properly. Of yet more interest — sellers of these systems will find they offer a solid revenue opportunity with good margins and lots of potential for repeat business.

According to the "old hand" in this growing sector, there are a number of issues to be aware of before heading into POS. In fact, Sutherland, president of Oakville, Ont.-based Classic Software Systems Inc., established her POS company in 1991 and has been working as a computer business consultant since 1977. In that time, she has built up a cross-Canada dealership base "even in little towns that most people don't even know about."

Unique Market

Sutherland warns that anyone planning to move into the POS business should realize that it is very different than selling single PCs. "The two markets are very different, in that we market business automated solutions dedicated to the retail environment — including the software, hardware and peripherals," she explains.

Sutherland says to properly support POS systems you really need to know how all the components in it can work together. That means when someone walks up to find why they can't read the right code from the POS system to activate a display or get a receipt printer to print, the reseller must have some idea of how to solve the problem. "We have compiled a product group where a dealer can call us up and say, 'I have a restaurant client, what can I do for him?'" she says. "We offer both Windows and DOS-based applications and we assist the dealer in making the best selection of combinations of hardware and

software. We have built the expertise that will put the complete package together."

In addition, she says it isn't just about getting cash registers, printers, screens and other POS devices to properly talk to one another. Sutherland suggests that a key success factor to knowing something about the business into which you're selling — and understand the day-to-day business challenges facing that business.

Understanding POS Vertical Markets

"In theory, they (all POS applications) are all the same, in that the most basic systems need to generate a receipt and take cash," she admits, but says the differences often lie in the detail. "In automotive POS software, you need to keep track of services — while stylists need to be able to book appointments with specific people in the hairdressing business and keep track of who cut a customer's hair the last time they visited."



"In automotive POS software, you need to keep track of services — while stylists need to be able to book appointments with specific people in the hairdressing business and keep track of who cut a customer's hair the last time they visited."

— Ingrid Sutherland

dressing business and keep track of who cut a customer's hair the last time they visited."

Sutherland says: "Each vertical market has its own needs. What makes one POS product (different from another) is what it is

capable of doing at the time of the transaction — whether it can handle coupons, lay-away, split tender, returns and so on."

Looking Ahead

Being successful in the POS market isn't always just a question of knowing how businesses work now, but also anticipating how they might work in the future.

That philosophy is behind much of the business decisions currently being taken by Richardson, a BC-based POS manufacturer and distributor SDMS Ltd.

Smart Cards

SDMS president Steve Gagnon says the big trend to watch right now is "smart cards" and his company is actively working on many retail and service applications using this technology. "A new trend that is raising quite a bit of concern has to do with smart cards — and the question of implementing smart card applications." He explains that smart cards are credit card-sized devices that commonly contain computer memory and sometimes an on-board computer processor. The cards can be programmed and made secure, with such features as passwords. "There is a growing movement toward smart cards because magnetic cards (commonly the technology used by most credit cards and bank cards) are very vulnerable to fraud."

He says that SDMS has been involved in discussions with a wide range of markets on using smart cards, including the medical services sector in Quebec, where they are under consideration as a replacement for existing medical identity cards for the province's medical services plan. "In that case, they would yield a wide variety of advantages," he explains. "If you make an application for a prescription, for example, it could be put on smart card so you can extract it without error — without relying on doctor handwriting."

"It would also prevent people going to multiple drug stores to get the same prescrip-



tions and make sure that everyone's prescription items (about which medications do not agree with them) could be held on the card. It would also mean that your medical records would follow you so that your medical history, which is sometimes critical to you receiving the right medical treatment, could reside on your smart card," said Gagnon.

Electronic Cash

In the commercial arena, smart cards also look like they could revolutionize the way many retail transactions are handled, as major players such as Visa and Mastercard carry out their trials of smart card-based commerce. The idea behind this "electronic cash" is: A user could go to a local bank machine, or even to a device that was attached to a telephone at home — and use it to "load" money onto a smart card for spending wherever they want to use it.

Gagnon says the big advantage of this technology over more traditional methods of electronic retailing (such as the Internet network) is that there are no "per transaction" charges once the money is loaded onto the

card and you can then allow transactions for as little as 25 cents without worrying about them being commercially viable.

"You'll be able to transfer money onto the card via smart card phones or from one smart card to another when you want to pay someone else," he says. "It is also ideal for meters — and could be a convenient alternative to cash when you need to carry multiple currencies with up to four different currencies being able to be held on a smart card."

Flat Displays

The other big trend Gagnon says he sees in POS is the increasing use of flat panel displays instead of standard CRT displays. "A 14-inch monitor takes up two to three feet of retail space and if you are paying by the square foot, that is a lot of lost space." He says some new flat panel designs are being designed with a touch-screen capabilities and a built-in, on-screen keyboard for easy entry with the need for a keyboard. "They all look like something out of Star Trek."

— Steve Gagnon

Whatever your interest in point of sale systems is, it appears it is a growing and fast-changing market with lots of new and interesting opportunities.

It is clear that you need to know your customer, be prepared to commit to supporting that customer and be on top of the latest technologies to constantly improve your solutions. Industry players emphasize that POS customers tend to be loyal and less price-conscious than those buying PCs.

It is one thing if an individual PC in an office goes down and one person can't use it for a little while, but quite another if the point of sale system at a busy retail shop is not working and customers can't pay for goods they want to purchase. While a regular may feel they've saved money by buying a cheap POS system — that gain could instantly be wiped out if the system breaks down and caused the store to lose sales for any more than a few minutes.

But for the POS reseller, this means opportunity to add value — because indications are, you're dealing with customers who truly appreciate service and reliability. *ME*

Geoff Whetstone is a Vancouver-based technology and business journalist. He can be reached at gwhetstone@syscan.com.



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Waiting for the Universal Serial Bus

That bus is due sometime in 1997, but when?

by Alan Zisman



Let's go for a ride on the bus—the PC's expansion bus that is.

A computer's bus works more or less like the city bus—but the passengers are data signals rather than passengers like commuters. Like commuters,

however, the computer's data signals get on the bus at various places and get off at their own individual stops, but travel on a single bus along the way. And, a well-designed bus makes sure that a wide variety of passengers can go along for the ride, and that all get where they're going—in quickly as possible.

The PC has an internal bus providing connections between the CPU and the RAM, as well as the slower ISA (Industry Standard) 16-bit bus, typically holding the sound card and monitor. More modern and more power-

unlikely that we'll see them put into effect in the near future.

Some PCs have added a SCSI connector to-extend the ISA or PCI bus—plugging in an expansion card to allow a total of seven drives, to be daisy-chained, lined up one after another, at least theoretically with little configuration necessary. This matches the

"It will be a couple of years before we'll be able to entirely do away with the mess of conventional ports and wires."

capacity that has been standard in Macintosh models since the Mac Plus of 1987. SCSI, however, has never been more than a curiosity-tastic on PCs, partly due to the extra configuration needed to get the SCSI card itself up and running, and the extra cost of the SCSI devices themselves.

Still, PC users have envied the ease with

which the parallel port is much slower than real SCSI—my parallel port Zip drive, for example, is less than half as perky as a SCSI model.

Enter The USB

This is the year that we should start to see the answer: Systems including the new

"Systems including the new Universal Serial Bus standard promise to eliminate the need for separate connectors for keyboard, mouse, game, serial, and parallel ports—replacing all with a couple of USB ports."

64 PCI buses address the more demanding video, network, and hard drive connections.

Peripheral Component Interconnect (PCI) provides a 32-bit bus running at 33MHz, with a peak throughput of 133Mbps. Enhanced PCI versions offering (either) double the speed (that) or double the width (wide) are possible, but it's

which Mac owners could plug in add-on devices in the system's external bay. In the past year or two, we've seen the PC's parallel port being used more and more as a sort of peer-to-peer's SCSI—devices from Zip drives to QuickCams to Snappy video capture gizmos have all plugged into the computer's printer port. But while a clever Work-

Universal Serial Bus standard promise to eliminate the need for separate connectors for keyboard, mouse, game, serial, and parallel ports—replacing all with a couple of USB ports. This should produce a cleaner system, with easier configuration, and better performance.

A typical PC is limited to two parallel ports and four serial ports—and the serial ports are limited to a throughput of 115Kbps. By comparison, up to 127 devices can be connected to a USB port, with data travelling at 12Mbps. The four-pin USB connector includes two powered pins, so that plugged-in devices won't need external power supplies. The first device plugged in, perhaps a keyboard, will act as a hub—additional devices will be plugged into it, not directly into the computer. Some USB devices, such as mice, should be batless—able to plug directly into the system. And yes, Mac users, the long-time Apple Desktop Bus (ADB) has enabled you to plug your mouse into your keyboard—but with much



low power and speed than USB will offer. Try plugging your scanner or printer into your Mac's keyboard!

USB supports hot plugging and plug and play — that means that devices can be plugged in while the computer is running, and that the operating system will (hopefully) identify the devices, and provide drivers as needed.

USB hardware is included on a few models from major manufacturers: the IBM Aptiva 578 and Toshiba Infira, for example. New Pentium and MMX motherboards have pins allowing for easy addition of USB ports, but typically (as of early 1997), OEMs are not yet including the USB ports themselves. Here we have a classic chicken-and-egg dilemma — there aren't many USB devices available yet. The Toshiba model ships with a USB keyboard, but the Aptiva or the USB-capable Sony PCV-90 don't come with anything to plug into the new port. And until recently, there hasn't been any system-level software support for USB — Toshiba had to write proprietary drivers.

Even Microsoft's recent OEM-SR2

(Service Release 2) version of Win 95 lacked USB support. Now, however, Microsoft has released a patch for SR2 that provides this support. More class device drivers are expected to be built into Microsoft's two 1997 operating systems: Memphis (Windows 97) and NT 5.0, just beginning testing for release dates later this year. These make it easier to add drivers for specific classes of peripherals, such as cameras, speakers, and scanners. A single USB connection could support all of these, along with high-speed cable modems or ADSL modems, which currently need to be plugged into an Ethernet card.

But even with support in the operating system, it's going to take a while for peripheral devices to trickle onto the market, although a number were shown at last fall's Comdex, including monitors from Sony, NEC and Daewoo. Canon showed off a USB printer, while several manufacturers showed off keyboards. Panasonic has promised a USB digital camera and a USB speaker, early in 1997.

As a result of this tentativeness from the motherboard manufacturers, peripheral man-

ufacturers, and Microsoft, it will be a couple of years before we'll be able to entirely do away with the mess of conventional ports and wires.

Predictions

USB won't be a serious contender until later in 1997 at the earliest. Buyers should not, however, buy a system that isn't USB-ready. At a minimum, they should be able to add USB ports onto their new system when operating system and peripheral support becomes more of a reality. OEMs need to make sure that the systems they're shipping provide such potential.

USB isn't the only new bus architecture, however. Also expect to see AGP (Accelerated Graphics Port) to speed up hot-fixes in today's graphics adapters, and Firewire (at least, not another three letter acronym). Officially called IEEE 1394, it provides an external bus sharing at 100Mbps (compared to USB's 12Mbps). ■

Alex Zinman is a computer journalist and teacher living in Vancouver.

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What Do Cars and Music Have To Do With Selling Computers?

By George Bennett

Resellers —
consider the lessons learned in other industries.
You may be surprised at the similarities to YOUR business.



A metaphor is often a useful way of thinking about the way we do things in business. Indeed, sometimes a precedent extrapolated from a completely different concept can help us figure out emerging trends. Naturally, the benefit is an opportunity to foresee a trend as it is just taking off and get the best (and most profitable) piece of the action, on the leading edge of the curve. Here, then, are some metaphors to consider.

out, high-quality/high functionality designs from Japan gained a dominant position in the market place. By the time the U.S. automakers reinvigorated themselves, the market place had a new set of values. Part of the U.S. auto industry's problem was that it was operating on a "planned obsolescence" model that consumers got fed up with. I think the parallels are obvious here. Need an example? Look at Apple. 2. How fast does it go? At a certain point, speed stopped mattering to the mass market (of course, some enthusiasts continue to care about the zero-to-sixty factor, and are willing to pay dearly for it), and other issues became more important. What happened after the "muscle car" phase of the '60s and early '70s?

3. How are cars marketed and what do consumers buy? How did you buy your first car? How long did you own it, and what did you do with it when you sold it? Consider that used (make that "pre-owned") cars are a very big business — a business that is still struggling to overcome its "deoxy telomere" image problem.

In a lot of ways, the computer industry has just emerged from the automobile industry's "big fins" era. Think of the monikers and PCs of a couple of years ago: Taximeters were high, power economy was low and units were big and bulky. Hard to maneuver — but just look at these power windows!

If this metaphor carries any weight, then the new-generation "sculptured" PCs from Acer, Apple and Compaq are just *now* "big fins." The real market-shift happened because of compact cars — the portables. They made economic sense, and they cost plenty. But when

"In a lot of ways, the computer industry has just emerged from the automobile industry's 'big fins' era."

The Automobile Industry

If we look beyond the obvious automobile references of "where do you want to go today?" and the done-to-death "information superhighway" metaphors, there are a number of interesting parallels between the auto industry has been and where it seems the computer industry is going.

1. The U.S. auto industry had a crisis in quality control and — more importantly — consumer confidence. But while it was figuring this

was the last time you bought a new car with cash?

Take a few minutes and think about the way the automobile market has evolved, for example, the leasing, the used models, the imports, and the "infomercial" advertising. Perhaps you will agree that that metaphor "tires wheels."

"The music business has both mechanical royalty and performance royalty systems that are a nearly ideal model for digital media."

Music As a Metaphor

There's another metaphor that may ring some bells. Think for a moment how music permeates our lives.

As children, we use simple nursery rhymes to learn the fundamentals of melody and rhythm. Even if we grow up as adults with a no car, music surrounds us. It's in virtually every TV show and every ad. It's on the radio, in our cars, on the street corner.

It may be worthwhile to consider that music is a metaphor for how we — or our children's children — will someday view technology and computers.

Ponder These Facts

The music business is big. The biggest trade show in the world is the Music Messe in Hamburg, Germany.

The music business has both mechanical royalty and performance royalty systems that are a nearly ideal model for digital media.

Electronic musical instruments have seamless, ubiquitous networking, that is both plug-and-play and virtually durability-proof. Electronic musical instruments have evolved to include a variety of highly visual input devices, including "electrotouch" touch sensitivity and pressure sensitivity, plus many exotic I/O devices such as joystick, ribbon controllers and breath controllers.

Musical instruments are used for both business (and a very big one it is), but more commonly for entertainment and pleasure. Many homes have a musical instrument, even if it is not currently played. It is both a symbol of culture and an entertainment device for guests.

Many forms of music (and/or the artist that create it) emphasize sex. It nicely communicates virtually any emotion. Most people don't want to create their own Music files, buy T-shirts, posters and other memorabilia in large numbers. Stores sell pre-packaged collections. Although there are many custom creators, a few rules generate most of the profits. It is a part of every culture on earth.

Music can be distributed in analog or digital formats. Consumers prefer random-access over linear access (tape). Replication is important. Music transmitted via wireless methods did not replace disc-based media, although tape is increasingly obsolete. It can be reproduced, created algorithmically, or via a variety of languages and structures.

shared learning systems

It has a corporate infrastructure that is in danger of breaking down as smaller, more nimble companies release "independent" products. It permits communications that are rich, and that may be easily integrated with other media types. Music is freely available, yet supports a multi-billion-dollar recording industry.

Modern musical instrument technologies have put some musicians out of business, and forced others to change their job descriptions.

Questions

- How many solos do you own? Where are they?
- What was the last piece of

music you heard? Where were you?

- Consider musical learning. How does the school system make band instruments available?
- How do children receive private lessons?
- What is the model for mechanical royalties?

Now, imagine that it is a few years in the future. Merely substitute the words "computer technology" for "music" in the previous statements.

Imagine that...

*George Stennett is managing editor at *The Computer Paper* and is a former computer reviewer. Based in Vancouver, he can be reached at george@tcp.ca*

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ViewSonic has launched the Optique V773 monitor

ViewSonic has announced the Optique V773 monitor, aimed at general business users and SOHO markets.

The 17-inch monitor uses a "Super Contrast" screen, which the company says provides "sharp" easy on the eyes text and bright, vivid colors. It offers a 640-man 480-pixel resolution at 1,280 by 1,024, a refresh rate of 80Hz at 1,024 by 768, and an AR/AC anti-glare/anti-static screen treatment.

Estimated street price on the monitor is US\$349. For more information, call (800) 869-7976.



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Refill Guide & Cross Reference

Matrox Rainbow Runner Studio adds pro quality PC video

On Feb. 1, Montreal-based graphic card maker MATROX announced the Rainbow Runner Studio "comparison" card, a digital video add-on system for the Matrox Mystique 2D/3D graphics accelerator card. It is a move that seems likely to join other players in the digital video market, such as Germany's micro and Fast Electronics. Matrox is offering a host of hardware and software features built into the Rainbow Runner product with a street price of around \$249.

The Rainbow Runner offers Motion-JPEG (MJPEG) digital video compression, video conferencing, frame grabbing, NTSC (TV) video output, and hardware-based MPEG decoding. The Rainbow Runner Studio is designed to snap onto a Matrox Mystique card, using its included software PC Cam-cam captures incoming video as a digital file, edits it using the included Visual Media Studio software, and then edits sequences to disk in a variety of digital formats, or outputs it to videotape. Bundled VDOPhone Internet video conferencing software allows users to do video con-

ferencing via the Internet. The frame grabber feature of the card allows users to employ a VCR or video camera as a low cost image capture system, for video resolution digital photography. The Rainbow Runner Studio card also outputs to TV, allowing users to simultaneously display the computer screen image on a monitor and a TV set. This feature is very handy for making presentations to a large audience using available TV sets for display.

A separate product, an ISA card named the Rainbow Runner TV, is designed to allow PC users to view TV signals on the PC, either in a window or as full screen image.

Well-timed to coincide with the release of the Rainbow Runner Studio, Matrox also announced a price reduction of the Matrox Mystique graphics accelerator to about \$190. This means the complete system comprising the Mystique and Rainbow Runner Studio products has a combined price of less than \$530.

For more information, contact <http://www.matrox.com> or (514) 969-6340.

Novell announces GroupWise 5.1 for intranet collaboration

On Feb. 3, Novell Inc. announced a significant upgrade to GroupWise 5, Novell's instant collaboration software. Version 5.1 improvements in speed, performance and scalability plus enhanced Internet functionality. Client/server connections have been optimized, requiring less overhead and offering faster stamp and message throughput. Integration of documents has been enhanced as well.

GroupWise 5.1 is the next step in our effort to pro-



vide customers with the most advanced set of collaboration tools and the greatest amount of flexibility in how they implement and use them. This commitment to our customers has made GroupWise the groupware product of choice for more than seven million users," according to Paul Baier, product manager at Novell Canada.

GroupWise 5.1 was scheduled to ship in late February, at no cost to registered GroupWise customers. For more information, contact <http://www.novell.com>.

SSA adds Web publishing tools for data access and analysis

SAS Institute (Canada) Inc. has introduced SAS/IntNet, a suite of Web publishing tools that "enhance access and analysis of relational data regardless of its location," says the company. According to SAS, this makes the SAS Data Warehouse a Web-enabled end-to-end solution.

The new suite is designed to allow enterprises to make more efficient use of databases for applications such as marketing and financial analysis, with information stored and processed on large servers accessible to any device that can run a Web browser, such as a network computer (NC) or "thin

client" or a PC.

According to Paul Bachelder, SAS Institute Canada's general manager, "The strength of our new software is its multi-vendor architecture that allows access to all data types on any platform across the Internet and opens new arenas for information delivery and data warehouse exploitation for IT departments and business users."

This best-of-breed product makes it easier for companies to deliver our solutions on the Web."

For more information on SAS, contact <http://www.sas.com> or (616) 363-6424.

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DataTel offers cable organizers

DataTel, a division of Middle Atlantic Products Inc., is offering the CK Series of cable ducts which the company says are suited for managing extremely large cable bundles.

DataTel says the ducts, measuring six inches wide by nine inches deep, feature rugged steel construction and a powder-coat finish in black or aluminum.

Two models are offered. The CK Series Center Organizers, when bolted between two racks, manage cables to the front and rear while allowing for left and right cable exit. CK Series End Organizers offer selective left or right cable exit. Suggested retail price is US\$150. A pair of Organizers covers lists for US\$346.

For more information, call (201) 615-7038.



Epson Canada releases Expression 636 business scanner



Epson Canada Ltd. has announced the Epson Expression 636, which the company says is a performance-driven, desktop color flatbed scanner.

With prices starting at \$1,279, the scanner is available in four distinct configurations. The Expression 636-Pro for the PC

includes: Adobe Photoshop, Kai's Power Tools, Claris HomePage, Xerox Tealbridge 3.0, a transparency unit, Presto PageManager, a SCSI interface board and SCSI cable.

The Expression 636-Pro for the Mac includes: Live Paper, Kai's Power Tools, Claris HomePage, e-Paper, a transparency unit, and SCSI cable. The Expression 636-Artist for the PC offers: Adobe's Photoshop, Kai's Power Tools, Claris HomePage, Xerox Tealbridge 3.0, Presto PageManager, a SCSI interface board and SCSI cables; and the Expression 636-Artist for Mac includes: Adobe Photoshop, Kai's Power Tools, Claris HomePage, e-Paper, and SCSI cable.

For more information on the product, call (416) 498-9935.

Silicon Graphics Canada Ltd. releases Octane workstation

Silicon Graphics Canada Ltd. has announced its Octane "power desktop" line which the company says features high-performance graphics, symmetric multiprocessing and 64-bit processing.

Instead of the conventional shared bus architecture, the system incorporates a separate circular switch (with a system bandwidth of 1.6GB/sec per port) and supports single or dual MIPS R10000 processors.

The company says Octane boasts a 70 per cent increase in floating point performance over the Indigo2 Impact 10000 family.

Octane systems come standard with 10Base-T/100Base-TX Ethernet, analog and digital audio I/O, external stereo speakers, 64MB or 128MB of memory (30B or 40B of disk), a 20-inch monitor and one of three graphics options. Pricing starts at \$38,072; \$53,300 for the dual-processing version. For more information, call (905) 625-4741, ext. 58.



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Woodley heads Oracle Canada

Oracle Corporation Canada Inc. has appointed Don Woodley as president and chief executive officer. Woodley leaves Compaq Canada Inc., after almost 10 years as president and managing director.

Woodley's new responsibility includes leading Oracle Canada's strategic business development as well as overseeing day-to-day operations. He reports to Barry Anso, Oracle Corp.

"Don Woodley served Compaq with distinction over the almost 10 years he was president in Canada," said Jim Sehring, vice-president, North America, Compaq Computer Corp. "He took the company to a position of PC market-share leader and complemented that with very impressive revenue growth along the way."

Compaq Canada is conducting a search for a new company president.

Informix adds channel development director

Informix Software (Canada) Inc., in Toronto, has appointed Don Jackson as director of channel sales. In his new role, he will be responsible for establishing a Canadian sales team, VAR relations, and channel business development.

Prior to joining Informix, he worked for six years with Buaq Systems Inc. in Canada, the U.S. and Latin America as manager of channel sales, marketing and distribution.

Orbile adds senior executives

Macmillan's Orbile Systems Inc. has appointed two new executives to its senior management team.

Gary Fritchett has been named executive vice-president and chief financial officer. His mandate is to "provide leadership in developing, implementing and funding a strategic merger and acquisition program to diversify and strengthen the company's operating base," according to the company.

Flachert was formerly a partner and financial consultant with Deloitte & Co.

Jack McInerney is the company's new vice-president, business development for

Orbile's wholly owned subsidiary, DYAD Systems Inc., of Toronto.

1Star changes executive team

Star Internet Inc., of Ottawa, has changed the roles of two company executives.

Star president and CEO Romeo Padach now takes on the role of vice-chairman and chief technology officer. According to the company, Padach has been the company's chief visionary since the inception of Star.

Craig Wallace, who has been executive vice-president, corporate development since June, will assume Padach's role as president and CEO for the company.

Intel realigns executive office

Effective May 21, Intel Corp.'s three-person executive office will shift offices. Craig Barrett, chief operating officer, will move from executive vice-president to president. Andrew Grove, CEO, will move from president to chairman of the board. Gordon Moore, will move from chairman to chairman emeritus. Moore said of Craig, in a comment: "He has been the operational head of the company during a period of extraordinary growth, and he has done an outstanding job. We're very pleased to see him step up to the position."

SCO names new CFO

The Santa Cruz Operation has named John Lubots as senior vice-president and chief financial officer. He was most recently vice-president of mergers and acquisitions, and prior to that was CFO for System Technologies. "John brings a wealth of experience in international finance," said Alok Mehra, president and CEO of SCO.

Statpower announces CEO

Bert Tschirhart has been named CEO for Statpower Technologies Corp., of Burnaby, B.C.

He is the former president of Com Corp.'s operating unit for the Eastern U.S.

"The future holds great opportunity, and I'm happy to be associated with a group that believes on such a great challenge as this," said Tschirhart in a statement.

Statpower produces the PWDwatt and Portswatt lines of DC to AC inverters and the Travolite line of battery chargers — products that are used in mobile office and other applications.

Insu realigns staff

(NBI) — Insu has named Jeffrey J. Melvin to the new position of vice-president, worldwide sales and service.

He previously was vice-president and general manager of Insu's Tools and Technologies business unit. In his new role, Melvin will provide strategic direction and leadership to Insu's newly integrated sales organization.

Also, the company has appointed Michael Melody to the new position of vice-president, strategic planning and operations. He previously was vice-president and general manager of the company's Information Products business unit.

Netrix announces president

(NBI) — Netrix Corp. has announced Lyra Chapman has been named president, chief executive officer (CEO), and a director of the company.

Chuck Stern, the company's president and CEO since 1987, has been named chairman of the board.

Chapman has been with the company since 1992, serving in a number of executive positions.

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While on the road recently, I got a chance to speak with Michael Cowpland, president of Corel Corp. in Ottawa. According to Cowpland, Corel is not in as bad shape as the stock market seems to think. He says that the market's concern is that Corel has taken on the giant Microsoft in the applications software market. He believes that once the honeymoon for Office 97 is over and Corel's next quarter reports are out, the market for their stock will rebound.

Corel has rapidly established a brand identity in the computer software market. It started life selling SCSI software for PCs. CorelDraw happened along and made the company's name. Corel now has more than 1,000 products, if you count the 200-plus Photo CDs of clip-art Corel sells.

Rapid Turnaround

One of the strengths that Cowpland touts is rapid turnaround of software products. Because of the company's approach with CorelDraw, the company's engineers are used to short revision cycles — 12 months, instead of the 18 to 24 months that Microsoft requires to revise the Microsoft Office. This has had the unfortunate consequence of earning Corel the reputation that the software they ship is still somewhat raw, though Cowpland claims the record has improved in this area. He claims that CorelDraw 7 has been well received and that bugs are not a big issue.

Opene Bennett, Managing Editor at *The Computer Paper* and our resident graphics expert, and of Corel 7, "Version 7, also designed for 32-bit Windows, has apparently fixed long-standing bugs related to object positioning and cropping in *Author*, *Illustrator*, *Formita*, and I find Corel's *Barista* ("print-to-Java" technology) to be an interesting — albeit underdeveloped — technology. For me, CorelDraw's killer feature (which it has had for a few years) is its ability to read/write PostScript files. In my tests, 7.0 is indeed more robust at importing, exporting and printing than version 6.0 was, but I have experienced some of the 'same old problems' — usually related to importing or exporting vector-graphics files. Nevertheless the package's inclusion of several impressive plug-ins of DTP

tools and its undeniable value makes it worth while addition to the PC user's toolkit."

Jeff Evans, Canadian Computer Wholesaler's Toronto Editor, said, "Corel has a history of tool giving a lot of value in the CorelDraw package, and for having quite a few bugs. However, the other major vendors aren't exactly guilt-free when it comes to buggy software. But I think there is a middle ground between perfection and villainous fraud, which most software publishers occupy, releasing imperfect software but generally trying to fix it up as quickly as they can."

CorelDraw for the Mac

Corel is happy with its Mac sales of CorelDraw, despite being passed by most Mac magazine reviewers. Many users of CorelDraw are non-graphics people, who are more concerned getting the large clip-art collections and bundled software for a great price than with using many of the high-end features. The same is proving true on the Mac, where the Corel package is priced significantly lower than competition and comprehensive upgrades are offered.

Cowpland admitted the success of the Mac Corel was based on outsourcing to a good Mac company called Millions in New York. Corel plus more Mac products. Cowpland sees the Macintosh market as a mature market that is not likely to grow much, but that has a loyal audience that buys product. Corel has plans for a full line for the Mac, including Quattro Pro, which he claims has more features than Lotus and Excel combined.

Videoconferencing Products

Corel's videoconferencing software has had some success. The current version operates on its own network, separate from the computer network. The company Iuri put together a digital video visiona that will operate over regular networks and the Internet. Cowpland claims Corel has sold the product to the White House.

There is a camera on virtually every desktop in Corel's 900-person Ottawa office. The company communicates goals with a regular weekly TV show that features Cowpland and his product managers discussing where Corel is going.

New Markets

Corel has recently jumped into the geospatial software market, which Broderbund now seems to own, selling more than a million units last year. Corel aims to take a chunk of that market with a package developed out of core technologies in CorelDraw.

The company has also launched a number of custom packages aimed at the legal, medical and construction markets, using WordPerfect as a base, taking the same approach as with CorelDraw. Take a decent application, add a bunch of useful utilities to it and sell it for less than the customer would have had to pay elsewhere.

Cowpland claims the lawyer's package includes more than \$1,200 worth of additional goodies for lawyers. The rest of the company here is to be where Microsoft is not, and to build on the existing strength in the legal profession, where WordPerfect is still the market leader.

That is not to say that Corel has not had its fair share of losers products, but Cowpland claims the company is always pruning the list and has dropped a number of the games released in recent years.

Cowpland Is High-Bandwidth

Cowpland gives the impression of being a "high-bandwidth" kind of guy, who speaks very quickly, as if the rest world runs at a pace too slow for his quick brain. He has created a very successful company that has both a worldwide presence from the unlikely town of hamster and politicians, helping to create Silicon Valley North in the process. I came away with the sense that Cowpland is a man who knows his company and its customers well, from marketing to packaging to programming.

Corel faces a large challenge going up against Microsoft, but consumers seems to have some choice in the market, and Corel seems destined for more success if the company can keep up the pace and continue to offer different solutions.

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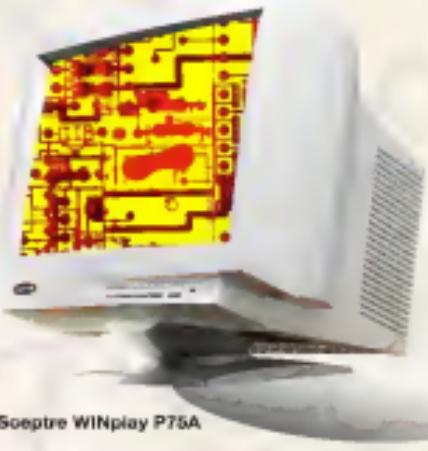
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